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ABSTRACT

Fifth in a series of abstract-bibliographies dealing with the various concrete issues and problems raised by population education workers in the course of undertaking population education programs, this volume reviews 67 publications published between 1970 and 1984, and gives examples of the different methodologies applied in population education and related subjects. Publications are classified under seven topical subheadings; values clarification, games/role-playing, discovery/inquiry-oriented approach, self-instructional approach, computer-assisted instruction, teaching through audiovisuals, and general. At the beginning of each section, a review and synthesis of the literature abstracted provides an overview of each topic. Under each classification, the entries or selections are arranged alphabetically by author, institution, or other main entry within each classification. UNESCO and Carolina Population Center descriptors and addresses of the sources of the materials are given for each entry. Abstracted materials include instructional materials; curriculum and training materials; guides and handbooks; literature reviews; research studies; and articles and reports of workshops and training programs. (LH)

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Teaching Methodologies in Population Education

Abstract-Bibliography
Series 5

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Values Clarification

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Discovery/Inquiry-Oriented Approach

Self-Instructional Approach

Computer-Assisted Instruction

Teaching Through Audio-Visuals

SO 016 488

Population Education Programme Service
UNESCO REGIONAL OFFICE FOR EDUCATION IN ASIA AND THE PACIFIC
Bangkok, 1984

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INTRODUCTION

This issue is the fifth in a series of abstract-bibliographies dealing with various concrete issues and problems raised by population education workers in the course of undertaking population education programmes. This fifth volume attempts to answer the questions: What are the most effective teaching methods in delivering population education content and methodology? What are the most effective teaching strategies that can help bring about the programme's objectives of increasing the students' as well as teachers' knowledge, attitudes, behaviour and skills in population education?

Population education cannot be responsibly taught in the schools without coming to grips with the many controversial ethical and value-laden issues underlying the choices or decisions which must be made. Examples of these population issues which require making decisions at the personal level are the questions on when to marry, where to live, what occupation to engage in, when to have the first child, how many children to have. At the macro level, population programmes are inherently susceptible to becoming controversial when they involve conflicting values that generate ethical dilemmas such as: individual rights versus collective rights, freedom versus coercion, human survival versus survival of peoples.

Because the subject matter is controversial, it is therefore preferable that the emphasis should be placed on an exploration of alternatives from which the students can make rational decisions. The teaching of population education cannot view the child as an empty container into which knowledge can be poured or in which the teacher simply hands down ready-made answers to the students. The students must be given the opportunity to explore their own feelings, thinking and value structures on all the possible aspects of a population phenomenon and discuss alternative issues. This process will enable students to make responsible decisions regarding their population-related behaviour.

The population education programme places great emphasis in the process through which the student decides on his population-related behaviour. In effect, the programme aims to develop the type of students who can understand, observe, describe, and predict what changes in the population mean; what is the effect on society of having many more younger people than older people in the population; what affects the growth of population more— birth rates or death rates, etc. It is assumed that whatever the product or decision the individual has arrived at, it was done through a rational or logical process. A programme which stresses 'learning how to learn' will better enable the students to internalize population education concepts and develop better-held favourable attitudes.

The implication for the choice of teaching methodologies is clear – it must be the type which involves the learners in the process. A review of materials and documents on population education shows that a number of teaching methodologies have been tried for this purpose. Examples of these include the inquiry or discovery approach; values clarification; games; role-playing; audio-visual approach; and the self-instructional modular approach; which all commonly place emphasis on the student's participation. However, although population education programmes in Asia and the Pacific state that these methodologies are the appropriate and recommended ways of transmitting population education concepts in the classroom, very few have actually taken them up effectively or seriously. Even then, there still leaves much to be desired because of a lack of clear understanding and the incorrect use of such methodologies by the teachers.

This volume reviews 67 publications which define, describe and give examples of the different teaching methodologies as applied in population education and related subjects. The time-span of publications is from 1970 to 1984. The publications which have been selected here are those which not only describe the teaching methodologies which have been taken up in the classroom to reach students but also those which are being used to reach the teachers. They have been classified according to the following teaching methodologies:

Section One : Values Clarification
Section Two : Games/Role-Playing
Section Three : Discovery/Inquiry-Oriented Approach
Section Four : Self-Instructional Approach
Section Five : Computer-Assisted Instruction
Section Six : Teaching Through Audio-Visuals
Section Seven : General

The classifications are not necessarily mutually exclusive. While one section deals generally with values clarification and another with discovery/inquiry-oriented approaches, some abstracts in these sections also include a minor treatment of other teaching methodologies that are used to facilitate the more effective implementation of the teaching methodology primarily dealt with in one section. The last section has been given the heading "general" since the selections or entries do not focus on any one of the specific teaching methodologies but, by and large, encompass more than one or several teaching methodologies.

At the beginning of each section, a review and synthesis of the literature abstracted is provided to enable the reader to get an overall view of that particular topic authoritatively, quickly and critically. The review also presents generalizations derived from this analysis.

Under each classification, the entries or selections are arranged alphabetically by author, institution or other main entries within each classification. The general format includes a list of descriptors which are derived from the Unesco IBE and the Carolina Population Centre thesauri and the addresses of the sources of the materials. The abstracts are long enough to give the reader not only the main issues but also the major ideas and conclusions arrived at. They include instructional materials; curricula and training materials; guides and handbooks; literature reviews; research studies; articles and reports of workshops and training programmes.

SECTION ONE: VALUES CLARIFICATION

Section One: Values Clarification: A Literature Review

There are 15 selections in this section. Five of them are instructional materials which provide both the theoretical and practical discussion, such as definitions and procedures for undertaking values clarification including sample lessons or activities. Four are research studies and papers which show the effectiveness, weaknesses and strengths of values clarification as a teaching method and six are papers and articles which provide analysis and insights on values and ethical and value-laden issues that are inherent in population education programmes and show how they are handled by the use of values clarification.

In this section, a group of six publications first explain why population education is an inherently value-laden and controversial subject. These publications examine the various value-laden or ethical issues that make population education programmes controversial. According to the literature, conflicting values give rise to ethical dilemmas in population such as: individual rights versus collective rights; the achievement of equal justice; freedom versus coercion; human survival versus survival of peoples and the ethics of social and economic incentives. Two of these are research studies which analyse the values which explain the attitudes that people have toward the desire for children and their country's population policies.

According to the literature, because population education, as an area of study, has many controversial and value-laden issues, the best way of dealing with them in the classroom is through the use of a teaching methodology called 'values clarification'. Values clarification is designed to engage students and teachers in the active formulation and examination of values. It does not teach a particular set of values. The goal is to involve the students in practical experiences, making them aware of their own feelings, their own ideas, their own beliefs, so that the choices and decisions they make are conscious and deliberate and are based on their own value system.

There are many strategies and models for undertaking values clarification as presented in the publications abstracted here. The most popular is the valuing process formulated by Raths, Harmin and Simon. Their strategy basically consists of choosing freely from alternatives after thoughtful consideration of the consequences of each alternative. After choosing, the person is happy with the choice and is willing to affirm the choice publicly by acting or doing something with the choice repeatedly in some pattern of life. Another model is called 'Teaching a Moral Dilemma' which consists of four steps: (1) confront a moral dilemma; (2) state a position on the original or alternative moral dilemma; (3) test the reasoning for a position on a moral dilemma; and (4) reflect on a reason for the position. Jack Fraenkel uses the affective component of valuing in his 'Exploring Feelings' where the teacher uses questions, poetry or articles as a springboard for exploring one's values and feelings. In this strategy, students are asked to describe their perceptions freely about the central figure or message in a story or poetry, and how they could feel in a similar situation. Sidney Simon's strategies such as value sheets, personal coat of arms, value statements, likes/dislikes, raise questions which explore the students' feelings, preferences and likes and dislikes. In these techniques, students do not consider value dilemmas – they do not challenge each others' preferences and feelings because there are no right or wrong answers. What they do compare are their likes and dislikes to find out some trends or patterns in their preferences and to discover the values behind their choices. Sweeney and Parson's 'Social Issues Model' is a highly cognitive type of valuing as opposed to Fraenkel's. In this strategy, the following processes are followed: (1) selection and presentation of materials; (2) analysis of these materials (by defining, clarifying, classifying and comparing); (3) reflection; and (4) application. Another example, formulated by Jayasuriya recommends the following procedures: (1) recognizing the existence of values and that there are individual differences as well as commonalities among the values that different persons hold; (2) recognizing that other individuals are entitled to hold values different from theirs; (3) inferring from words and actions the values that underlie them; (4) identifying values that should be encouraged and discouraged; (5) examining existing socio-cultural values as to their functional utility in the context of life in the present day; and (6) recognizing and analyzing value conflicts. These are just a few examples of the many strategies being used to conducting values clarification. These strategies have been shown by the literature examined here to be applicable in discussing population topics such as human sexuality, social behaviour, moral dilemmas on contraceptive use, family size and sex preference, delayed versus early marriage, family welfare, quality of life, marriage-related values, health and economic values and moral and cultural values and population policies. These five publications do not only provide the definition, characteristics and procedures for undertaking values clarification, but also include a good number of practical examples and activities as applied in population education.

One selection is a literature review which made a synthesis and analysis of the various values clarification strategies. This analysis shows the following trends: first, the type of valuing process chosen helps facilitate the values clarification and strategy. Some strategies emphasize the affective process, based on the premise that values are more easily developed subjectively and through empathy. Other strategies stress the cognitive process, as values are considered products of thinking rather than feeling. Second, the degree of student-teacher involvement helps facilitate the values clarification strategy. Some strategies are better facilitated if the students discover their values by themselves. Implementation of major student activities by the students requires minimum teacher participation. Greater teacher participation is required where his attempts at resolving value conflicts among students are to be resolved. Third, the kind of outcome determines how values clarification strategy should be implemented. Some strategies consider value processing as an end in itself: students do not arrive at a common value but are required to undertake the valuing process successfully. Other strategies require that students arrive at a value decision after considering a proposed set of alternative values. A more closed-ended strategy calls for resolution of conflicts among students. Fourth, the kind of resources and devices used facilitate value clarification. Strategies based on the assumption that valuing is a private and personal activity require that they be implemented through writing, paper-and-pencil activity, or self-instruction. Other strategies, based on the premise that values are acquired through experience, require that valuing be undertaken through discussions and verbal exchanges to expose students to others' thinking and alternative values.

In addition to these trends, the four research studies which have been included here and which have tested the effectiveness of values clarification as a teaching method revealed the following findings: (1) students, given the opportunity to clarify their values or to undergo the value clarifying process, showed improvement in their attitude towards learning. They became more committed to, and purposefully, consistently and constructively involved in school work; (2) students given the opportunity to clarify their values in the classroom showed improvement in grades and a gain in knowledge; (3) when the valuing process was instituted among children described as apathetic, indecisive, overconforming, inconsistent, flighty, and lacking value clarity, these types of behaviour became noticeably less acute and less frequent. Lastly, the effectiveness of the value clarification strategy depends (a) on the personality, mental ability and age of the students; (b) to some extent on the competence and personality of the teacher; (c) on the degree of controversiality and value content of population issues and their appropriateness to the level of maturity and experience of the students; and (d) on administrative support and sanction.

MORAL AND VALUE ISSUES IN POPULATION

01

Association for Values Education and Research. *Population problems.* Toronto, OISE Press/Ontario Institute for Studies in Education, 1980. 51 p. (Value reasoning series)

This manual consists of various activities and lessons which will enable teachers to take up complex moral and value issues dealing with the population problem in the classroom. Many activities deal with the issue of a more equitable distribution of resources. Thought-provoking statements are presented on whether the "have" nations should share their wealth with the "have not" nations, as well as whether within one nation, the "haves" should share their resources with the "have nots". The other side of coin points out that while the "have nots" are wealthy in food resources, they have a higher incidence of protein-calorie malnutrition and infant deaths associated with poor nutrition because most of the food resources are exported to the "have" nations. Meanwhile the richest five per cent consume two or three times more than is needed. Other activities present moral dilemmas which deal on such issues as abortion, economic advantage of having many children, mandatory sterilization and immigration. These are presented in a case-study approach in which the students are presented with a dilemma for which they are forced to make a choice. In solving these dilemmas, the manual provides a model which makes use of the reasoning skills to enable the students to make rational decisions.

To enable the teachers and students to discuss the value and moral issues more rationally, the manual provides articles and clippings that present all sides of an issue derived from different sources.

A number of activities utilizes role-playing and practical syllogism wherein either the value premise, the factual premise or conclusion is missing and to be filled out by the students. A game board is also used to depict the hardships encountered by a developing country. Points are gained or lost according to profits or losses made by the player.

Descriptors: *Instructional Materials, Secondary Grades; Values Clarification; Moral Values; Family Planning, Food*

Source:
The Ontario Institute for Studies in Education
252 Bloor Street West
Toronto, Ontario M5 S IV6
Canada

ATTITUDES TOWARDS POPULATION GROWTH

02

Back, Kurt W. "Values and demographic conditions in attitudes on population policy," in: U.S. National Institute of Child Health and Human Development. Center for Population Research. *Population psychology: research and educational issues.* Washington, D.C., U.S. Government Printing Office, 1976, p. 153-160.

This study was aimed at determining the attitudes toward population growth in general and birth control policy as influenced by the respondents position, personal position, attitude toward personal responsibility and the importance of social problem. The method used is secondary analysis of a variety of studies undertaken by different countries. Then the countries were clustered according to two sets of criteria: demographic and economic conditions, and political and social conditions. The main purpose is to concentrate on variables that predict answers to questions of concern with population growth (population control) and acceptance of contraception (family planning) in a variety of countries in different stages of development.

The study came out with the following findings: (1) the variable as a whole do not predict as well in both the least and most developed countries, and they predict concern with population size better than interest in birth control; (2) among the predictors themselves, social position (socio-economic status and education) is the strongest predictor, followed by personal position and the attitude sets; (3) there is a trend for the attitude items to be more important in the developed countries but the interaction of type of country with the other variables is not significant; (4) religion also made significant difference in the countries' attitude toward population policy. In the Catholic countries concern with population growth was easier to predict and in the non-Catholic countries acceptance of contraception was easier to predict.

Descriptors: *Research; Moral Values; Population Policy; Family Planning; Attitudes*

Sources: The Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
U.S.A.

TIPS FOR TEACHING VALUE-LADEN ISSUES

03

Beyond reproduction: tips and techniques for teaching sensitive family life education issues, by ETR Associates Training Staff. Santa Cruz, Network Publications, 1983. 16 p.

This publication comes out of the authors' intention to share with other family life education successful approaches for handling "sensitive" family life education issues. The section on *parent involvement* is intended to provide concrete examples of ways to work in a partnership relationship with parents as programmes are developed and taught to their children. This section enumerates the many concerns and worries of parents in the teaching of human sexuality to their children. Suggestions are then presented on how to reduce or eliminate these concerns. One concrete way of doing this is writing a letter to the parents explaining about this course. A sample parent notification letter is presented. Then the sections on content and process attempt to provide practical suggestions to the teachers for approximately responding to these concerns.

Several examples are given on the following topics: (1) teaching about contraception; (2) teaching about decision-making; (3) decision-making model; (4) teaching about pregnancy alternatives; and (5) answering questions about sexual behaviour and orientation. In undertaking these activities, some common procedures are followed such as defining the problem first; considering all alternatives and discussing the consequences of each alternative and lastly clarifying one's family and personal values with regard to each alternative.

In teaching a course in family life education, the teachers are given a number of ground rules or guidelines. The manual also provides the teachers with tips on how to handle questions from the students regarding their personal beliefs. The manual gives tips at the end on how to select and work best with guest speakers. It is important that if the subject is controversial, the guest speaker should present all the relevant viewpoints. It also gives guidelines on the selection of learning activities which require that the teacher must be sure of her own objectives and that she feels confident and competent in using that activity. These guidelines are made more concrete by a presentation of actual procedures on how to conduct these learning activities. Guidelines are also given with regard to the selection of audio-visual materials.

Descriptors: *Family Life Education; Human Sexuality; Social Values*

Source:
Network Publications
ETR Associates
1700 Mission St., Suite 203
P.O. Box 8506
Santa Cruz, CA 95061-8506
U.S.A.

VALUES ATTACHED TO CHILDREN

04

Bulatao, Rodolfo A. "Values, attitudes and the desire for children," in: Bulatao, Rudolfo A. *Philippine population research: papers and proceedings of an experts' meeting.* Manila, Population Center Foundation, 1976, p. 275-305.

A questionnaire was administered to a sample of Filipinos, consisting of relatively young married couples (wife below 35 years and husband below 45 years) with at least one child, roughly distributed equally among three socio-economic groups, namely the urban middle class, the urban lower class, and rural residents.

The responses to the question: "What would you say are some of the good things or advantages of having children compared with not having children? provided a relatively direct answer to the values attached to children by parents. The two most frequently given advantages, mentioned by more than half of each socio-economic group, were the happiness children bring into their parent's life or into the home and the care, guidance, and financial security they provide for old age. The urban middle-class sample stressed happiness somewhat more than assistance, and rural residents stressed old-age assistance more. The next two advantages, each mentioned by more than a third of the respondents, were both utilitarian: practical help from children in housework, in running errands, in watching over the house; and economic assistance: help in earning a living or when parents are in need. Both these values were more important for rural residents.

A parallel question probed for the disadvantages of having children. Financial problems were ranked most important in each of the three socio-economic groups. Following this disvalue were three categories of responses having to do with problems connected with child-rearing: disciplinary problems were the first of these, the responsibility and worry of child care, including child health in particular, was second, and general anxieties about children was third.

Besides the open-ended questions referred to, value attached to children were ascertained through a Likert scale. The five items which received strongest endorsement were: (1) Having children around makes a stronger bond between husband and wife; (2) One of the best things about being a parent is the chance to teach children what they should do and what they should not do: (3) One of the highest purposes of life is to have children; (4) It is only natural that a man should want children; (5) A person who has been a good parent can feel completely satisfied with his achievements in life.

It will be noted that no value similar to these was among the most frequently mentioned advantages. A conclusion that may be arrived at from this kind of inconsistency is that there may be different types of values, or that value may have different aspects that reveal themselves from different perspectives.

Descriptors: *Social Values; Values of Children; Research; Philippines*

Source: Population Center Foundation
Population Information Division
P.O. Box 2065, Makati, Commercial Center
Metro Manila, Philippines

WHY POPULATION EDUCATION IS NEEDED

05

Chauls, Don. *Population education – a clarification.* Bangkok, Unesco Regional Office for Education in Asia, 1975. 8 p. (Population Education Documents. Reprint series no. III, D. 10)

After providing a definition of what population education is, the author isolates a number of important aspects of this definition. One is that population education is "education" as distinguished from a propaganda campaign. It tries to develop in people responsible attitudes so that people themselves will make better decisions: they should not be coerced into doing so. Secondly population education is not synonymous with sex education and it is future-oriented. It is also aimed at people of all ages and not limited to school children alone.

The author then discusses why there is a need for population education. Population education is needed to supplement existing government programmes which try to reduce the birth rate and the rural-to-urban migration rate. These existing programmes have not been totally effective because people want to do the opposite of the government's policy. An educational programme will help them to better understand both their own decision and their society's decisions. Secondly, population education is needed because it is a new content area which is highly relevant to people's lives. More so than most new types of education, it also is likely to encourage improvements in teaching methodologies, the structures of the educational system, in the value of teachers and students and in other areas.

Descriptors: *Population Education; Educational Objectives; Social Values*

Source: Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500, Thailand

CLARIFYING ETHICAL ISSUES ON POPULATION

06

Cruz, Leonardo de la. *Ethical issues in population education: topics for values clarification.* A paper presented at the Unesco Group Training Course on Population Education, Bangkok, October 1977. 10 p.

This paper discusses the ethical component of value related to population education. Ethics refers to what is right or wrong. There are many crucial ethical issues in population education for population education minus ethical issues could be merely demography. Four ethical issues related to population education are discussed here. They include: freedom, economic development, politics and ethics, and distributive justice.

For the ethical issue of freedom, one camp believes that freedom to procreate or to have any number of children is a basic human freedom. However, freedom to have children has to be viewed in terms of freedom to enjoy quality of life. Freedom to have as many children that one wants will limit man's freedom for employment, agricultural, health and housing facilities. With regard to economic development, one camp views children as assets especially in agricultural communities who can help provide extra income to the family. On the other hand, another camp contends that children are economic liabilities drawing upon food, clothing, health, education resources. The issue of politics deal with the fear of minority groups in a country that population control is a systematic way of exterminating them. It also deals with the fear that population regulation may ultimately reduce a country's manpower especially for defence use. With regard to distributive justice, one camp says that only the financially poor and genetically inferior should not have more children. The highly intelligent, handsome or beautiful and well-off should procreate more for the sake of improving the race. Another group states that the burden of reducing family size is the responsibility of all. A related issue is whether only the developing nations need to do something to arrest population growth and not the highly developed nations.

In taking up these value-laden issues, the paper recommends the use of values clarification. The basic assumption of a value-fair situation is that there are no population-related decisions or actions which are by nature "right" or "wrong". In this situation, it is the task of the educator to provide content which will enable learners to evaluate the range of options for a given issue. Here, the biases and attitudes and values will be identified and open to evaluation. The article then briefly describes what values clarification is and the steps followed in the valuing process.

The papers appends two models of values clarification. One model confronts the readers with two moral dilemmas: one states that large families are God's will and large families promote morality and help prevent divorce. Another states that it is a mortal sin to beget children that one cannot feed. In resolving this dilemma, several steps are presented to be followed to help person logically analyse and clarify his own position with regard to this dilemma. The second model uses Sweeny and Parsons' Social Issues Model to resolve the issue of whether to control or not to control population growth.

Descriptors: *Ethics; Values Clarification; Human Rights; Social Values; Family Planning*

Source: Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500, Thailand

POPULATION ETHICS IN SOCIAL SERVICE

07

Hunter, Helen J. *Ethical issues of population policy in social service practice; discussion outline and summarized references.* Ann Arbor, Social Work Education and Population Planning Project, University of Michigan, 1976. 69 p. (Study aids for social work education).

This publication is primarily intended for social work educators to be used in discussing population factors with trainees in social work. Ethical issues related to population factors are equally relevant to population educators, and from this point of view the publication merits the close attention of those involved in population education.

Inter-relationships between population education and ethical issues are a matter for concern in two major respects. In the first place, the content of courses in population education and the methods of instruction should be ethically defensible. Secondly, a course in population education cannot but consider the population policies and programmes in operation in the country concerned, and these policies and programmes have ethical dimensions which are a legitimate concern of those engaged in population education.

The summarized references in this publication deal with several aspects of population ethics. First, some basic information about the subject matter of ethics is included. Following that, some specific issues are emphasized, such as the central values of freedom, justice and security, and survival. Human rights and duties and self-determination are carefully discussed, particular attention being paid to what is entailed in the reaffirmation by the United Nations of family planning as a fundamental human right. Several ethical dilemmas arising from conflicting values are also discussed. These include individual rights versus collective rights, the achievement of equal justice, freedom versus coercion; human (or species) survival versus survival of peoples (genocide concerns); the ethics of social and economic incentives. A final section discusses criteria for decision-making about the ethical acceptability of population policies.

Descriptors: *Ethics; Social Values; Social Work; Population Education*

Source: Social Work Education and Population Planning Project
School of Social Work
University of Michigan
Ann Arbor, Michigan 48109
U.S.A.

PROCESSES IN VALUES CLARIFICATION

08

Jayasuriya, J.E. "Teaching methodologies for population education", in: Jayasuriya, J.E. *Curriculum innovation through population education.* Colombo, Associated Educational Publishers, 1978, p. 65-80.

This article starts by arguing against the use of discovery method in population education and supporting the case of exposition, oral or written, with or without response or discussion and the case for discussion, with or without a preceding exposition. Then the author suggests the following teaching methods for population education: (a) values clarification; (b) planning and decision-making; and (c) problem analysis and problem-solving.

Values are constellations of feelings, beliefs and attitudes which have implicit in them judgements of worth that serve as guides to action. Values are acquired in the process of growing up and in the light of one's experiences of thought and actions. Values clarification involves several sub-processes: (i) recognizing the existence of values and that there are individual differences as well as commonalities among the values that different persons hold; (ii) recognizing that other individuals are entitled to hold values different from each other; (iii) inferring from words and actions the values that underlie them; (iv) identifying values that should be encouraged and those that should be discouraged; (v) examining existing socio-cultural values as to their functional utility in the context of life in the present day; (vi) recognizing and analyzing value conflicts.

With regard to planning and decision-making, before one can come up with a good decision, data has to be gathered first. These data should offer alternatives. Then decisions have to be taken regarding the alternatives to be selected. A basic principle that should be emphasized in decision-making is that when a choice among alternatives is being made, the advantages and disadvantages, to oneself and to others, of pursuing each alternative should be carefully weighed by analyzing pertinent data and other relevant considerations.

In the use of problem analyses and problem-solving, the following elements should go into this exercise: (a) the recognition and statement of a problem; (b) the collection of data about the nature and dimensions of the problem; (c) the formulation of hypotheses about possible causes underlying a problem and the testing out of these hypotheses through the activity of thought (and action, when possible); (d) the arriving of conclusions regarding possible solutions to the problem; and finally (e) the testing out of these solutions through activity of thought (and action, when possible).

There has been no shortage of variety in the methods used to teach population education such as role-playing, brainstorming, use of springboards, buzz sessions, case studies, interviews, surveys, confrontation and small-group discussions. What is lacking, however, is evidence of systematic attention to the development of process skills.

Descriptors: *Discovery Approach; Expository Approach; Problem-Solving; Theoretical Discussion*

Source: Associated Educational Publishers
P.O. Box 603
Colombo, Sri Lanka

TELEVISION SERIES EXAMINES VALUES ON POPULATION

09

Life world 2000: a guide for teachers, by William F. Bailey. St. Louis, KETC-TV, 1974. 64 p.

Life World 2000 is the first American instructional television series on population produced specifically for use in the classroom. The twelve programmes, the content of which are reproduced in this guide is an introductory course for the study of population. The series considers a wide range of population-related issues and has the following objectives: (1) to help students understand how their actions have an impact on population; (2) to help students understand how population has an impact on them as individuals; and (3) to help them develop effective criteria for decision-making.

The programmes are open-ended and strive for objectivity. Students are encouraged to examine their own values about population matters and to be aware of the consequences of their actions on themselves, their family, society and the world. They are encouraged to probe more deeply into matters, to examine issues cautiously and critically, to dissent when they feel it is necessary, and above all to question the validity of any and all statements.

The twelve programmes deal with the following issues: the importance of the study of population; several considerations needed in deciding for an optimum level of population; demographic and population change; migration; pollution; density and crowding; urban problems; different family size; the effects of zero growth on American life; different attitudes toward population issues; population policy and alternative futures. Each programme or unit consists of the following parts: purpose, programme content, suggested activities, and teacher facts and figures and student materials. Each unit contains a brief scene description followed by the key learning points for that particular segment. Scenes and content are sequential, as they appear in the programme. Activities are divided into two kinds: before the programme and after the programme. Many activities and exercises deal with values. Values play a role in virtually all population-related processes and are absolutely fundamental in the development of population policies.

Descriptors: *Educational Television; Population Education; Population Dynamics; Population Density; Population Policy; Social Values; Secondary Grades; U.S.A.*

Source:
National Instructional Television
Box A
Bloomington, Indiana 47401
U.S.A.

USING VALUES CLARIFICATION IN TEACHING POPULATION EDUCATION

10

Philippines. Ministry of Education and Culture. Population Education Program. *Module on the value clarification approach in the teaching of population education.* Manila, 1984. 60 p.

This module is one of a set of 12 self-instructional modules prepared for modular training of teachers in population education in the Philippines. Population education is directed towards the improvement of the quality of life of the individual and the society. In order to attain this goal the individual must not only be made aware of the population events taking place in his community and country and their implications but must also be assisted to develop the ability to perceive population changes, understand the effects of these changes and make decisions. In the process of problem identification and problem-solving, values come into view. An individual needs to clarify his values before he can formulate rational decisions. This need is very pronounced in population education inasmuch as there are many value-laden in such topics as human sexuality, human reproduction, family planning methods, family size, and morality.

The first lesson explains briefly the meaning of values, i.e., standards, criteria or rules which give direction in determining how people act. The decisions that are made in life are based on values. In the formation of the values, the following requirements or criteria should be present: (1) choosing freely; (2) choosing from among alternatives; (3) choosing from thoughtful consideration of the consequences of each alternative; (4) prizing and cherishing; (5) affirming; (6) acting upon choice; and (7) repeating. All values contain cognitive elements; they have selective and directional quality; and they involve some affective components.

Population education, as an area of study has many controversial and value-laden issues. People attach differing values to these issues. Researches have shown that through value clarification students have learned to use both rational thinking and emotional awareness to examine their personal and social values. Values clarification is designed to engage students and teachers in the active formulation and examination of value without sermonizing or moralizing. In taking up values clarification, the teacher can use a combination of other teaching strategies such as value sheet, role-playing, games, simulation, brainstorming, value grid, time diaries, etc. The teacher uses the following appropriate questions to examine values: (1) factual questions (to find out knowledge of factual data); (2) definitional questions (to find out the meaning a student attach to a certain term or phrases); and (3) inferential question (ask the students to go beyond the data previously acquired).

In the third lesson, the usefulness of value clarification as used in teaching population education in the classroom are given. It is useful in personal growth and development of identity. It promotes team building and conflict resolution and stimulates among the students an active search for relevance. Most importantly, what have been learned in the classroom can be applied in the out-of-school settings. Several guidelines are given to the teacher to enable them to use value clarification effectively. These include the following: (1) view yourself as a facilitator rather than an expert on value; (2) before using it, take time to go through it personally first; (3) establish rapport, openness, trust, honesty and acceptance in the group so that students feel safe to explore their values; (4) emphasize that there are no right or wrong answers and participants can only share what they feel comfortable in sharing; (5) encourage students to listen and understand one another and not to moralize; and (6) participate in the discussion but don't be judgemental.

For each lesson, several examples in value clarification are given which deal with values that influence people to work in the city or the province; value that influence the size of the family, abortion, overpopulation, delayed marriage; how to spend the few years left on one's life; twenty things one loves to do; values grid; personal coat of arms; life career game; human sexuality; city life and its difficulties. The appendixes consist of answers to the pre-test and exercises; clarifying response suggested by the seven valuing process and various value clarification models and strategies.

Descriptors: *Instructional Materials; Teacher Training; Modular Training; Values Clarification; Educational Theories; Population Education.*

Source:
Population Education Program
Ministry of Education, Culture and Sports
Palacio del Governador on Aduana St.
Intramuros, Manila
Philippines

EFFECTIVENESS OF VALUES CLARIFICATION IN TEACHING POPULATION EDUCATION

11

Philippines. Ministry of Education, Culture and Sports. Population Education Program. *Value clarification in population education; research abstract.* Manila, Population Education Program in coordination with the Child and Youth Research Center 1978. 3 p.

Two objectives of the study are: to determine the effectiveness of value clarification as a methodology for teaching population education and to determine how the personality of teachers, sex, civil status, age, school level, religion, duration, type of community and educational attainment affect the effective use of values clarification. The sample included 2,285 public elementary and secondary school teachers, randomly selected from the twelve regional school divisions. The data collected were treated statistically using percentage analysis, ranking, chi-square test and Z-test between proportions.

The study come up with the following findings: (a) The valuing preferred by the highest percentage of population education teachers was a combination of both affective and cognitive processes; (b) Valuing instruction appeared to be student-centred; (c) The majority of the population education teachers practised the open-ended outcomes of valuing; (d) Valuing resources used seem to be a combination of discussion, paper-pencil, and role-play techniques; (e) No population education teacher expressed direct disagreement on the use of the valuing components, but many teachers were doubtful about the application of the components; (f) The majority of the population education teachers have normal personality traits; (g) However, the tendency for neurosis was significantly related to the type of community; (h) The self-sufficiency trait was significantly related to school level and educational attainment; (i) Developing introversion/extroversion was significantly related to civil status, age group, length of handling population education, educational attainment, and type of community; (j) The tendency for dominance/submission was significantly related to school level and type of community; (k) School level and type of community were significant factors in developing self-consciousness; (l) Sociability trait was significantly related to age group; (m) The application of the major components of value clarification was significantly related to personality traits; (n) Teachers who had tendencies towards emotional instability, lowness in self-sufficiency, introversion, submissiveness, and inferiority manifested doubt in applying the major components of valuing.

With regard to the personality traits of population education teachers, majority of the teachers has normal personality traits. However, the tendencies for neurosis, self-sufficiency, developing introversion/extroversion, dominance or submission, self-consciousness and sociability are significantly related in various ways to the educational attainment, type of community, civil status, age group, school level and length of handling population education.

The research also showed that the application of the major components of value clarification was significantly related to personality traits. Teachers who had tendencies towards emotional instability, lowness in self-sufficiency, introversion, submissiveness, and inferiority manifested doubt in applying the major components of valuing.

Descriptors: *Values Clarification; Teaching Skills; Research; Population Education; Philippines*

Source:
Population Education Program
Ministry of Education, Culture and Sports
Palacio del Governador on Aduana St.
Intramuros, Manila
Philippines

LITERATURE REVIEW ON THE EFFECTIVENESS OF VALUES CLARIFICATION

12

Population Center Foundation. *Value clarification on population education.* Manila, 1977. 126 p. (Population Education Research Utilization monograph series part 1)

The objective of the publication is to show, through an analytical review, the effectiveness of value clarification as a teaching method in other subject areas with the end in view of applying the findings on population education. The sample for the literature review were six value clarification models and strategies and a selective number of research studies done on the area. The research studies deal with the effects of value clarification on the attitudes, knowledge, and behaviour of students in elementary, high school, college and teacher training institutions. The majority of the studies are experimental, making use of the observation technique for gathering data, while the rest made use of paper-and-pencil tests.

The value clarification models were reviewed, compared and analysed according to four variables. These included: (a) valuing process: cognitive vs. affective; (b) student-teacher involvement: student-centred vs. teacher-centred; (c) outcome: value teaching vs. value processing, or closed-ended vs. open-ended; and (d) resources used: classroom vs. self-instruction; writing vs. structured; verbal exchanges vs. experiencing. The research studies were analysed and compared according to the following variables: (a) attitudinal change; (b) knowledge gain; (c) behavioural change; (d) student personality and competence; (e) teacher competence and personality; (f) controversial issues; and (g) administrative support.

The literature review came up with the following findings: First, the type of valuing process chosen helps facilitate the value clarification and strategy. Some strategies emphasize the affective process, based on the premise that values are more easily developed subjectively and through empathy. Other strategies stress the cognitive process, as values are considered products of thinking rather than feeling. Second, the degree of student-teacher involvement helps facilitate the value clarification strategy. Some strategies are better facilitated if the students discover their values by themselves. Implementation of major student activities by the students requires minimum teacher participation. Greater teacher participation is required where his attempts at resolving value conflicts among students are to be resolved. Third, the kind of outcome determines how value clarification strategy should be implemented. Some strategies consider value processing as an end in itself: students do not arrive at a common value but are required to undertake the valuing process successfully. Other strategies require that students arrive at a value decision after considering a proposed set of alternative values. A more closed-ended strategy calls for resolution of conflicts among students. Fourth, the kind of resources and devices used facilitate value clarification. Strategies based on the assumption that valuing is a private and personal activity require that they be implemented through writing, paper-and-pencil activity, or self-instruction. Other strategies, based on the premise that values are acquired through experience, require that valuing be undertaken through simulation and role-playing. Still other strategies require that valuing be done through discussions and verbal exchanges to expose students to others' thinking and alternative values.

With regard to its effects on students, the following findings are given: (1) Students, given the opportunity to clarify their values or to undergo the value clarifying process, showed improvement in their attitude towards learning. They became more committed to, and purposefully, consistently, and constructively involved in school work; (2) Students given the opportunity to clarify their values in the classroom showed improvement in grades and a gain in knowledge; and (3) When the valuing process was instituted among children described as apathetic, indecisive, over-conforming, inconsistent, flighty, and lacking value clarity, these types of behaviour became noticeably less acute and less frequent. Lastly, the effectiveness of the value clarification strategy depends (a) on the personality, mental ability and age of the students; (b) to some extent on the competence and personality of the teacher; (c) on the degree of controversiality and value content of population issues and their appropriateness to the level of maturity and experience of the students; and (d) on administrative support and sanction.

Descriptors: *Values Clarification; Valuing Process; Moral Values; Human Sexuality; Population Education; Research*

Source:
Population Information Division
Population Center Foundation
P.O. Box 2065
Makati Commercial Center
Makati Rizal, Metro Manila
Philippines

MEASURING VALUES AND VALUE SYSTEMS

13

Rokeach, Milton. *The nature of human values.* New York, Free Press, 1973. 438 p.

The author suggests the following extended definitions of a value and a value system. To say that a person has a value is to say that he has an enduring prescriptive or proscriptive belief that a specific mode of behaviour or end-state of existence is preferred to an opposite mode of behaviour or end-state. This belief transcends attitudes toward objects and toward situations, ideology, presentations of self to others, evaluations, judgements, justifications, comparisons of self with others, and attempts to influence others. Values serve adjustive, ego-defensive, knowledge, and self-actualizing functions. Instrumental and terminal values are related yet are separately organized into relatively enduring hierarchical organizations along a continuum of importance.

From the point of view of those involved in population education, there are two chapters of special interest. The first is the chapter dealing with the measurement of values and value systems. It suggests a simple way of carrying out a value survey, using two lists of alphabetically arranged instrumental and terminal values. Each contains 18 values, and the respondent is required to rank them in the order of importance to him or her. Apart from the analysis of individual protocols, group differences can be investigated. In fact, the latter is illustrated in the chapter entitled "Values as social indicators of the quality of life in America". The responses of different population groups are interesting. For example, relatively poor socio-economic groups rank "clean" high, whereas the affluent do not. This is explained on the ground that to those living in squatter, cleanliness is a highly desired value, while the affluent living in congenial surroundings do not attach any significance to it.

A great advantage in the technique is that it is both simple and adaptable. It lends itself also for use in pre- and post-assessments in connection with educational programmes so that value changes as the result of such programmes may be ascertained.

Descriptors: *Social Values*

Source: Free Press
A Division of Macmillan Publishing Co.
866 Third Avenue
New York, N.Y. 10022
U.S.A.

EDUCATION FOR JUSTICE INCLUDES POPULATION EDUCATION

14

U.S. National Catholic Educational Association. *Seeking a just society through population education.* Proceedings of the Population Education Workshop sponsored by the Department of Elementary Schools of the National Catholic Educational Association, 15-17 December 1974. Washington, D.C., 1974. 62 p.

Two articles of particular interest as reflecting the Roman Catholic point of view are "The population problem in building a just society" by Rev. J. Bryan Hehir, and "Population education as part of education for justice" by Rev. Peter J. Henriot.

Rev. Hehir points out that a primary characteristic of the world today is interdependence. The two challenges that follow from this are to develop the perspective necessary to live in an interdependent world in such a way that life is civil and humane for all, and to develop a strategy to educate for an interdependent world. In regard to two major crises confronting the world – food and energy – it would be fair to say that rapid population growth is part of the problem. While stressing that solutions should be directed towards other aspects of the problem as well, in particular the establishment of a new international economic order, Rev. Hehir outlines a Roman Catholic perspective on population control. The principal elements of this perspective are firstly to oppose unreservedly abortion and sterilization as means for population control, and secondly to maintain a low profile on other means of contraception. The stance against abortion and sterilization is based on fundamental human right. Few other institutions possess the access to people's lives, consciences, feelings, and beliefs the way the church has in its daily educational and pastoral work, and these means should be used to convey the stance of the Church to its members.

Rev. Henriot lists several elements that should be included in education for justice. Justice is basically a structural issue, involving the institutions, the processes and interactions of society. Education for justice should move from the anecdotal (that is, an incidence of justice or injustice) to the analytical (that is, the way things are interrelated). It should pay attention to values, and identify the values embodied in the structures, processes, institutions and interactions of society. Education for justice should also help people to analyse and modify, if necessary, their view of reality. Population education lends itself to education for justice. It is concerned with the relationships between population and development, population and the structures of development, population and consumption. Population education is also concerned with values, and finally population education is concerned with the whole area of perspectives and the view of reality. Population education is very centrally a part of what those who are involved in a variety of ways with Christian education are called to focus upon.

Descriptors: *Social Values; Family Planning; Social Justice; Population Education; Religion*

Source:
National Catholic Educational Association
1 Dupont Circle; Suite 350
Washington, D.C. 20036
U.S.A.

THREE MAJOR TRADITIONAL VALUES ON POPULATION

15

Veatch, Robert M. *Ethics, population policy and population education.* Bangkok, Unesco Regional Office for Education in Asia, 1973. 11 p. (Population Education Documents. Reproduction Series, D5.)

If population education is to be carried out responsibly in the schools, it will have to come to grips with the great ethical issues underlying the choices which must be made. The writer focused on three specific examples of ethical complexities out of three traditional major values.

The first issue centres on human freedom versus manipulative social planning. While freedom is a fundamental value in the society, making pure and unlimited freedom the sole criterion of a population policy would raise some complex problems and touch on issues which may not be morally acceptable such as abortion, sterilization and even conventional birth control. Many more would reject the freedom of choice of birth control for unmarried minors or to commit infanticide. They would also question at what point does encouraging social change slide from the enhancement of social freedom to the manipulation of social behaviour? The fact is that one man's freedom may be another man's limitation.

The second issue centres on human survival versus social genocide. This states that the ecological balance of life and the continued existence of human life depends upon curbing population growth. However, critics see this as a means of exterminating ethnic groups, in this case, the extermination of the blacks in the United States. The competing claims of these different entities require that the ethical question: survival of whom? be answered. Similarly, critics also believe that birth control projects are aimed at the low-income population.

The third issue asks the question about justice: who should have the children? Population programmes which offer rewards or incentives for not having children or imposing a fee or penalty for having children, illustrate the problems of creating a just population programme who will be affected by incentives and rewards. Presumably the poor are the ones who can be most easily enticed by the rewards and penalities. Critics question whether these plans enhance the freedom of individuals by creating choices which have not previously been opened or do they become manipulative and unjust by putting pressures on some while others will be unaffected by the same incentives?

The author then presents some recommendations in the teaching of population ethics. He believes that in choosing which facts to present and emphasize, the teacher cannot avoid making value choices. Even in the selection of materials, values also influence the teacher. He therefore recommends that all points of views be given from a team of teachers or resource persons who each have their own biases. Lastly, he proposed that the education system should be asked to move to the most fundamental level, including basic changes in the lives of individual students, rather than letting them flow more spontaneously from student decisions based upon broader exploration of many sets of values. For him, in an audience which is not prepared to discuss and debate the values issues at stake, the teaching can verge on the manipulative. A more sound approach is the exploration of alternative value systems in an atmosphere which permits the maximum discussion of the issues which are at stake.

Descriptors: *Ethics; Human Rights; Social Values; Social Justice*

Source:
Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500
Thailand

Section Two: Games/Role-Playing: Literature Review

Of the 15 selections included in this section, eleven are exercises or examples of games on population education for ready use by the teachers; two are theoretical discussions on what games are, its uses and its various types and two are research studies showing the effectiveness, strengths and weaknesses of games as a teaching method. While 10 of the publications deal directly with gaming in population education, three deal with games as applied in non-formal education and literacy training which are also relevant to non-formal population education.

One selection states that population education programmes embody several features that make games and role-play attractive as educational techniques. These include the strong attitudinal component of programme objectives, the complexity of the systems with which population education deals and the resistance to change that pervade the social and economic fabric of many societies. The literature points out that population education is aimed at promoting changes in attitudes and behaviours with regard to family size and other fertility behaviours of an individual. But many of these behaviours run counter to the general social tradition. It is therefore suggested by the literature that not only new models for behaviours should be proposed but for these new models to be reinforced and sustained. Role-plays and games in population education serve as vehicles for presenting new role models. Role enactment techniques have proved to be one of the most effective means of inducing stable, effective and attitudinal change. Games and role-plays can be used in population education to facilitate the examination of values and to provide role models for the adaptation of new behaviours. Games are also effective in presenting complex population concepts and compression of large-scale effects resulting from the long time span over which population variables operate.

Games have been defined by the documents reviewed here in many ways. One author classifies educational games as falling into the role-play and simulation categories. Some do not draw any distinction between role-playing, games and simulation. The elements that make games "fun" are chance, the exercise of skills, drama and sometimes competition as well as the compression of time and space of real-life situations, giving players a chance to learn the consequences of actions and situations without actually going through them. Another definition given is that it is any contest among players on the board, players learn how time, fate and other circumstances affect decision-making regarding life-styles and family size. "Shantytown" is a simulation intended to help players: (1) understand the problems faced by recent immigrants; (2) experience the economic demands required to survive in the city; and (3) learn about urban institutions such as employment and moneylenders. Each immigrant begins the game with 300 pesos brought from the village. The small circle in the game board represents unemployment, with each turn around the circle representing one week of time. When a player lands on the employment square he then moves to the large circle which represents employment. But the large circle also represents the major costs of living in the city and some of the difficulties people are likely to experience. The "Population Education Game" entails a couple to make decisions with regard to their family size. As the family size increases, the players will experience difficulties related to high cost of living. Whether to send the children to school or not is the major dilemma of the game. The players are faced with the dilemma of sending their children to school and paying high school fees or keeping them at home to help in the farm. The other three simulations also basically work like the "monopoly" where play money, game board, cards, and dice are used to experience gains and losses as they go through life's vicissitudes – whether it concerns the family, community or nation.

Three selections also describe three role-playing activities. One role-play represents a situation where a discussion is taking place in a village council about how to utilize best the only available land in the village. Council members role-play by giving suggestions on how to use it best. While some support it others oppose it until everyone realizes that man's need for land is increasing and consequently as population increases, land space decreases. Another role-play places a team of two students in the position of managing a country. There are roles for 20 different countries. Each country has the same population and capital but they have different birth and death rates – which result in different population increases. Students are required to make decisions concerning investments, resource exploration and savings. The winner is the team which generates the most profits.

A large number of numeracy skill practice games have also been described in the publications. Most of them involve problem-solving of mathematical exercises which deal with population dynamics. Still another publication defines game as a sub-division of play which has limits of time and space and action, described in certain rules; has outcomes which are uncertain but conclusive and is competitive.

Games have been categorized by the literature examined here in many ways. One type of classification includes physical, symbolic and social games. One selection groups them according to "showdown", "co-ordination" and "strategy". Another typology has to do with "zero-sum" and "non-zero sum" games. They are also classified as skill practice games, role-playing and simulation.

Research and evaluation studies (reviewed by the literature included here) which have been conducted on the use of games, role-playing and simulation in classroom teaching have generally found these teaching techniques effective. According to these studies, games' effectiveness is primarily found in its ability to involve learners intensely and directly in the process of learning because it is fun and entertaining. Entertainment is a powerful tool for motivating learners. Along with the opportunity for active participation, most games provide the learners with instant information about the correctness of their efforts. Skills learned are reinforced because they promote applications to real settings and roles. However, other studies have found that games in some cases are only effective if used at the beginning of an instructional unit to motivate learning or should be played repeatedly to gain its maximum effectiveness. Some studies also show that games are more effective if a post-game discussion is carried out during which features of strategy, realism of the game model and its implications for real life are examined. The studies warned however that if not carried out properly, games may turn out to be distracting and amusing or may cause some children devastating losses which go beyond the game itself.

The publications abstracted here offer many examples of games as applied in population education. The most popular is simulation games using board. Planafam I and II simulate decision-making regarding life-style and family size. By picking up cards, spinning the dial and moving the markers on the board, players learn how time, fate and other circumstances affect decision-making regarding life-styles and family size. In "Food for Thought: a Population Simulation Kit", the players make use of calculation of doubling time or exponential growth by filling in a circle with students in groups equal to yearly population growth showing the expansion of the circle with the increase in student number. It also uses calculation of how long it will take to spend $1 million at the rate of $1,000 per day or how many grains will accumulate if one grain of rice is placed on the first square, 2 grains for the second square, 4 grains for the third and so forth until all the squares in the entire checker-board are filled up. To illustrate between the uneven distribution and consumption of protein food sources and population size, students are made to carry a bowl of peanuts which represent 33.33 grams of protein which are distributed to the various regions of the world. It shows that while Asia has the largest amount of peanuts it also has the largest population to feed and that each Asian receives considerably less grams of protein per day than each North American, Russian or European.

Mazes, drawing and crossword puzzles are also used extensively in conveying population education concepts.

SENSITIVE TOPICS IN POPULATION DISCUSSED THROUGH DRAMAS

16

Bernales, Elizabeth H. "Drama in population education class", *Population Forum* 8(2): 7-9, 1982.

It is the aim of the population education programme to develop among children and the youth, knowledge, attitude, skills and understanding necessary to enable them to make rational and responsible decisions regarding their fertility behaviour and other population-related matters. To carry this out in the school, Professor Mercedes Hernandez of the Lyceum of the Philippines uses mainly the role-playing approach in handling her Population Education and Family Planning Course. This article describes how her students present a drama on the cultural aspect of family planning.

The drama starts with a letter from a listener of the "Kuya Eddie" radio programme series. He writes that he has a pregnant wife and three growing children and a host of other relatives living in his house. He found it difficult to make both ends meet so what was he to do? The problem and solution are depicted in a skit where family planning workers find it very difficult to persuade the couple to practice family planning because of traditional beliefs and values such as "it is against the will of God", "vasectomy will lessen my sexual appetite" or "it will make me less of a man". Meanwhile life becomes harder for the family and his family. In the end however, a peer, a neighbour who is a family planning acceptor himself, succeeded in enlightening him and finally convincing him to submit to vasectomy.

Because there are a number of delicate topics taken up in population education, the subject is taught in the fourth year curriculum. Discussing them in a drama or role-playing manner lessen the sensitiveness of the topics. The population education class also ceases to be merely a litany of birth rates, death rates and contraceptive methods but rather a wholly relevant, enjoyable and enriching activity.

Descriptors: *Educational Games; Role-Playing; Family Planning; Higher Education; Philippines*

Source:
Population Forum
Commission on Population
Population Center Foundation Building
P.O. Box 2065, Makati Commercial Center
Makati, Rizal, Philippines

SIMULATION GAME IN POPULATION EVALUATED

17

Connor, T. *A method for improving the perception of reality and understanding of the population problem in the college classroom: a simulation game.* Ph.D. dissertation, North Texas State University, 1972. 130 p. Unpublished.

The purpose of the study was to develop a college level simulation game dealing with selected aspects of the population problem. Of the 16 educational objectives that were generated for the game, the following 12 objectives were approved by a panel: upon completion of the exercise, students should be able to compute population increases, to predict population sizes, and to identify birth and death rates that cause a population to increase, decrease or remain stable. Students should also be able to describe how the following factors affect population size: cultural and religious beliefs, pressure for economic growth, investments of capital, and financial losses. Students should also be able to describe how the following factors affect population size: cultural and religious beliefs, pressure for economic growth, investments of capital, and financial losses. Students should understand the problems of governing a country with a rapidly growing population as compared to problems in governing a country with slower population growth, and they should recognize how rapid population growth can affect the quality of life. Students should recognize decreased birth rates, increased death rates, and increased economic production as possible solutions to the population problem. Finally, students should personalize the population problem and make commitments in seeking and participating in its solutions.

A simulation game based upon the objectives was played, modified, and played again by various faculty and student groups of different sizes, until a satisfactory model was achieved.

The "Population Game" places a team of two students in the position of managing a country. There are roles for twenty different countries: each country has the same population and capital, but they do have different population increases. Students are required to make decisions concerning investments, resource exploration, and savings. Depending upon their philosophy and that of their country, they can also make investments to change their birth and death rates, thus changing their population increase. After students have determined where they will invest their capital, they draw a factor card for each investment. The figures on the factor cards are based on world increases and losses in those categories during the last decade. In general, as the potential for profit increases, the potential for loss also increases. After students have calculated their profits or losses, they must determine their population for the coming year. The game cycle is then repeated for six additional rounds, or years.

The simulation game was sent to the panel members for their evaluation, using the *Curriculum Materials Analysis System.* All members of the panel approved the simulation game. On the basis of the panel's evaluations, it is concluded that the simulation game is applicable to a wide range of educational levels. From the results of the study, the following inferences are made: the simulation game provides prospective teachers with an opportunity to become acquainted with an educational technique used to present academic material; simulation games are a serious educational technique; teachers are encouraged to modify the simulation in appropriate ways.

Descriptors: *Educational Games; Simulation Games; Population Education; Population Dynamics; Economic Development; Quality of Life; Higher Education; Research*

Source:
University Microfilms International
P.O. Box 1346
Ann Arbor, Michigan 48106
U.S.A.

EXPERIENCES IN DEVELOPING GAMES

18

Etling, Arlen. *Collaboration for materials* *development.* Amherst, Mass., Center for International Education, University of Massachusetts, 1977. 49 p. (Center for International Education. Training notes series, no. 2)

This publication documents the experience of the author as a consultant to a workshop undertaken in Indonesia. The workshop was aimed at developing skills in workshop organization and direction and in materials development in the non-formal sector; at preparing and introducing sample educational materials during the workshop; and guiding the workshop participants in producing two board simulation games and six skill practice game for pilot testing and evaluation.

Materials development for non-formal education was undertaken using the following steps: (1) identifying the problems of the target population; (2) deciding on the priority problems to be attacked; (3) reviewing a wide variety of available sample materials; (4) discussing the uses and weaknesses of each material after which priorities are determined; (5) specifying objectives of the materials development; (6) adapting existing materials where possible; and (7) developing new materials when necessary. The consultant and the group decided to produce two board simulations and six skills practice games. In developing the board simulation games, the following components were taken into consideration: (1) general situation; (2) specific focus; (3) objective (how you win the game); (4) messages (assumptions, biases, values communicated by the game); (5) variables (decisions and chance factors); (6) format; (7) roles; (8) process (how the game is played); and (9) tuning (making adjustments so that the simulation is more realistic and playable). To be effective, simulation games should be action-oriented, provides alternative optional curricula, inexpensive, easily reproducible, motivating, immediately relevant, self-explanatory, self-generating, community-based and allows complementarity of distribution systems.

The last part of the publication describes how the author established her credibility and usefulness after which she shifted from an "expert" role to a "catalyst" role. The next step was for her to transfer her skills in workshop organization and materials development to her Indonesian counterparts who gradually gained confidence. During the workshop itself, the Indonesians played a more prominent role and the consultant played a decreasingly important role. Finally, drawing from this experience, the consultant provides a "collaborator's checklist" to guide consultants who may wish to try the facilitator role.

The publication appends seven games. These include the following: (1) *Barrio* – a board game which simulates life in an urban slum. This game has value in teaching budgeting and decision-making skills to barrio residents; (2) *Bintang Anda (Your Fortune)* – aims at creating social awareness and economical attitudes; (3) *Gotong Rojong (The Community Game)* – involves the participation of the whole population in building a strong community where each one contributes the needed resource to help build the community; (4) *Galacang* – a game using a wooden board with holes where the aim is to place as many pieces in the holes of the contender's home; (5) *School* – involves rapid recall to sharpen one's mathematical skills; (6) *Marbles* – enables one to practice his mathematical skills where players shoot their marbles from a pre-determined distance, aiming to land on the inner circle; and (7) *Bekland (Jacks)* – makes use of mixing the dices to improve manual dexterity to number dice games combined with word building.

Descriptors: *Educational Games; Simulation Games; Non-formal Education; Instructional Materials Development; Theoretical Discussion*

Source:
Publications Assistant
Centre for International Education
Hills House South
University of Massachusetts
Amherst, Mass. 01003
U.S.A.

WHY GAMES ARE POTENT FOR CONVEYING POPULATION EDUCATION MESSAGES

19

Finseth, Katherine M. "Games and population education", in: Kline, David and David Harman. *Issues in population education.* Lexington, Mass., Lexington Books, 1976, p. 187-203.

Research on population education has shown that students thrive on activities that require their active participation. Population education programmes embody several features that make games and role-play attractive as educational techniques. These include the strong attitudinal component of programme objectives, the complexity of the systems with which population education deals and the resistances to change that pervade the social and economic fabric of many societies.

"Games" fall into the role-play and simulation categories in a continuum that groups several types of teaching techniques ranging from the conceptual level to real life level. The elements that make games "fun" are chance, the exercise of skills, drama and sometimes competition as well as the compression of time and space of real life situations, giving players a chance to learn the consequences of actions and situations without actually going through them. Games are categorized according to physical, symbolic and social. It can also be classified according to showdown games, strategy and co-ordination games. The author presents the advantages and disadvantages of each type.

Studies which have evaluated the effectiveness of games came out with mixed findings. While some studies showed students' intense involvement and immediate positive attitude change, some studies revealed that its effectiveness can only be achieved if it is repeatedly played or used at the beginning of an instructional unit to motivate learning. Still others suggested that games will be more effective if it can be properly applied at the appropriate learning stages. In many cases, games' strengths come out stronger if they are accompanied by post-game discussions and analysis during which features of strategy, realism of the game model and its implications for real life are examined. The limitations of the technique as practical teaching device also include cost of materials, time of development and class time spent in game play if it is not appropriate to the teacher's objectives.

Population education basically aims at establishing new patterns of behaviour that run counter to the general social tradition. To solve this problem, first, the desired patterns of behaviour should be adequately exemplified by change agents and performance should be linked with a graded system of incentives. For population educators to attain their goal of promoting "responsible behaviour" – they will have to propose new models of behaviour and a strategy for reinforcing the new behaviour. Role-plays and games in population education are vehicles for presenting new role models for the adaptation of new behaviours and for facilitating the examination of values. There are two games which have been prepared on population. The first is Planafam I which introduces the player to role-playing on reproductive decisions in an unfamiliar and non-threatening context. Planafam II deals with demographic statistics.

Descriptors: *Educational Games; Role-Playing; Population Education; Theoretical Discussion; Research.*

Source:
Lexington Books
D.C. Heath and Company
Lexington, Massachusetts
02173
U.S.A.

RELATIONSHIP BETWEEN PEOPLE AND FOOD SIMULATED

20

Food for thought: a population simulation kit, developed by Population Institute in co-operation with Population Reference Bureau. Washington, D.C., Population Institute/Population Reference Bureau, 1976. One packet of materials.

This kit is designed to foster an appreciation for an understanding of some of the relationships, problems and consequences involved in population growth and distribution of people, food and land area.

The simulation kit consists of three main parts. The first part entitled, "World Population Growth", aims to illustrate how population grow; to explore some of the reasons why populations grow faster or slower; and to bring into focus the idea that unlimited population growth is not possible given the finite resources of the world. To carry out these objectives, the participants calculate how money grows when interest is compounded and they are given an exponential growth problem to solve. They are also asked to mark off a circle about six feet in diameter in which at specific time intervals, a specific number of students enter the circle to represent the world's population of the given years. As larger number of participants enter the circle, it must be expanded to accommodate the increased number. Two optional activities are also given illustrating exponential growth of food grains and the relationship between a population's doubling time and average family size.

The second part entitled, "Distribution of World Population and Agricultural Land" illustrates the uneven distribution of population within and among major regions and shows the relationship between the size of a population and the amount of land available for its support. This is carried out by dividing the world into regions and in each region, the participants are grouped according to the urban and rural areas. Those who fall under rural area mark off the fraction of the total area suitable for agriculture. Then a rural representative report the amount of arable acres available per person in each region with the use of a Discussion Guide. The second activity involves the participants to simulate a hearing of the U.S. Senate Committee on Immigration and Naturalization that would establish an annual ceiling of 200,000 immigrants legally allowed in the United States. Debates and discussions for and against the bill are undertaken by various special interest groups.

The third part entitled, "Distribution of World Food" illustrates the relationship between the uneven distribution and consumption of protein food sources and population size using an "ideal" versus the real world situation. This is carried out by distributing a bowl of peanuts to various regions of the world. Each peanut represents 33.33 grams of protein but the simulation shows that an average Asian consumes approximately 61 grams of protein a day which is less than an American, Russian or European receives. This part is also carried out with two optional activities: a) "Feeding the Family" demonstrates the difficult decisions a family must make where there is not enough food to go around for everyone; and (b) "Protein Consumption" shows the significance of protein consumption in one's diet and the problems resulting from lack of protein in developing, densely populated countries.

Each part consists of a Discussion Guide at the end to elicit factual information, opinions and feeling from the participants. In addition to optional activities, the *Resource Materials* include a glossary of terms, a sourcebook of population organizations, population charts, population and geography summary sheet for each region and a summary data sheet.

Descriptors: *Educational Games; Simulation Games; Population Education; Population Density; Population Dynamics; Food; Land Development.*

Source: Population Reference Bureau, Inc.
2213 M Street, N.W.
Washington, D.C. 20037
U.S.A.
or Population Institute
110 Maryland Avenue, N.E.
Washington, D.C. 20002
U.S.A.

GAMES ON POPULATION EDUCATION FOR CHILDREN

21

For children; the fun-to-learn-and-do magazine. Vol. 1, no. 5, 1974. Special World Population Year issue. Produced in collaboration with Population Education Program of the Ministry of Education and Culture (Philippines), 1974. 44 p.

A magazine for children of 6 to 12 years old, this special issue is devoted to the World Population Year. It contains several games in the form of crossword puzzles, matching, classification, maze, game board and picture puzzles that deal with various aspects of population. One board game plays like monopoly where the players take turns in throwing the dice and moving along the board which consists of events in the family that entail spending or earning money. These include such events as payday, paying for school supplies and school fees, rental fees, grocery day, market day, holiday with pay, water bill or electric bill, new baby brother arrives, baptismal party, receiving savings' interest. The player who finishes the month or year with the most money is the winner. Another deals with migration carried out in a maze form. Here, a village boy who always longed for some adventure in the big city one day took the crowded bus for the city. The city was not what he thought it would be — littered streets, noisy cars, unfriendly crowd — then he wished he was back in his peaceful village but he was lost. The player is asked to help him find his way back to the barrio. Another game includes a map of the world and a set of children in their native costumes. The player is asked to colour and cut each child and paste on the country or continent he or she belongs. An interesting game which requires skills of drawing is a drawing of four houses of different sizes. The player is asked to draw a family into each house to see how many members can fit into each house.

Descriptors: *Educational Games; Crossword Puzzles; Riddles; Quiz Games; Picture Puzzles; Drawing; Population Education; Family Budget; Migration; Primary Grades; Philippines*

Source: Population Education Program
Ministry of Education, Culture and Sports
Palacio del Governador on Aduana St.
Intramuros, Manila
Philippines

WHY GAMES ARE USEFUL IN TEACHING NON-FORMAL POPULATION EDUCATION

22

International Institute for Adult Literacy Methods. *Games and simulations in literacy training,* by David R. Evans. Tehran, International Institute for Adult Literacy Methods/Amersham, Bucks, Hulton Educational Publications, 1979. 136 p. (Literacy in development: a series of training monographs.)

Games are an important and powerful educational tool. There is a place for them in literacy training methods. However, it should be borne in mind that games are not the solution to literacy training. Particularly for social literacy, games must be used as a stimulus for discussion and analysis, and not as a substitute for it. The literacy worker must ensure that a full discussion takes place and that, ultimately, discussion is transferred from the game to life. Games provide a powerful means for motivating learners, for entertaining them, and for drawing out the quiet or unsure learner. Yet at the same time there must be systematic reinforcement of learning content to ensure that learners are both involved and successfully mastering the skills which they need. Games cannot carry the learning task alone.

Planners of literacy programmes should not overlook the fact that games are also fun for the facilitators and workers. Game design should remain in the hands of the local trainers and should not become a specialized task of professionals. The strength of gaming lies in the flexibility of the games and in their adaptability to many different needs and situations. Literacy programmes should encourage local participation in game design and modification.

A game is any contest among players interacting within a set of rules to achieve an objective. There are three major types of games – (1) skill-practice games; (2) role-playing; and (3) simulations. Skill-practice games are sets of materials which provide learners with situations where a basic skill is repeated many times with small variations. They are most useful for literacy and numeracy training, particularly at the lower skill levels. Role-playing requires a setting or scenario in which the action is to take place; a series of roles with descriptions of each and a problem or task which must be tackled by those selected to play the various roles. A simulation is a simplified model of some form of reality. Such a model is constructed by selecting the more important variables out of the many which are present in any real situation and using them to build up a model which represents or "simulates" that reality. The role plays and the simulation games are more relevant to social literacy and the application of literacy and numeracy to real-life situations. Some fundamental variables or features are common to all games. These include: learning objectives, single or multiple skills, chance versus skill, co-operation and competition, individual versus group activity, and 'show down' versus strategy.

The book then describes in more details the literacy and numeracy skill-practice games giving specific examples. Simulation games and role-playing are also dealt with separately. The chapter on literacy skill-practice game gives a simple outline of the key skills in literacy and enables the reader to visualize the various approaches to literacy training. It discusses the various design variables for skill-practice games. Each variable is discussed in terms of an example of a relevant literacy skill-practice game. Each example also serves as a model for a family of related games using the same structure. A total of eight examples are presented with a discussion of their strengths and weaknesses. In the chapter on numeracy skill-practice game, the book presents seven examples of numeracy games which are analysed in terms of skill focus, completeness and incompleteness of problem specification, adaptation of traditional games and their use in a social literacy context. Numeracy games might not be culturally acceptable because it involves gambling or inappropriate kinds of competition. However, numerous suggestions have been made of ways in which game design can be modified to make them more culturally appropriate.

In designing a simulation game, the following steps are given: Step one – situation; step two – learning objectives; step three-key actors; step four – actors' goals; step five – actors' resources; step six – decision-making rules; step seven – scoring; step eight – format; step nine – action sequence.

Descriptors: *Educational Games; Skill-Practice Games; Numeracy Skill-Practice Games; Simulation Games; Role-Playing; Literacy; Non-formal Education*

Source: International Institute for Adult Literacy Methods
P.O. Box 13145-654
Tehran, Iran
or Hulton Educational Publications Ltd.
Raans Road
Amersham, Bucks
England

GAMES MAKE POPULATION LEARNING FUN

23

Murphy, Elaine. "Population can be fun and games"; and "Population and the environment; getting the student involved", *Environmental Education Report,* October 1977; and July/August 1978.

This paper describes how teaching population concepts can be fun. To do this, several riddles, games and simulation exercises are presented. The author states that riddles are enjoyable for students but nonetheless help them understand a serious topic. In addition, they are "value fair" the exercises deal with size and timing of population growth, but do not attach a "good" or "bad" label to the outcomes.

Teaching methodologies in population education

The article describes briefly riddles and games which are very effective in demonstrating doubling time; in showing unequal distribution of resources within and among countries; in explaining the relationship between population growth and land space and in understanding of population dynamics so that demography need not be dull! Appended to the two-paged article are 17 games, simulation exercises and riddles which deal with the above-mentioned population topics. They also include topics showing the relationship between population growth and rising consumption; identifying areas of high and low population density in the world; recognizing some of the limits a community might have which would prevent certain populations from over-populating the area; patterns of migration; the one-versus two-child family; showing age structure and many others. Majority involves mathematical calculation, mapping and planning while some are carried out through group discussion and data gathering, crossword puzzles, arranging and organizing, brainstorming, bingo, matching, role-playing and simulation.

Descriptors: *Educational Games; Simulation Games; Riddles; Population Education; Mathematics; Social Studies; Science; Population Dynamics; Population Policy: Environment; Secondary Grades*

Source: Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500
Thailand

A GAME ON DECISION-MAKING REGARDING LIFE STYLES AND FAMILY SIZE

24

Planafam I: a game for population education, developed by Katherine Finseth. 1971. (Game instruction in English).

A game which can be used by junior and senior high school teachers, it facilitate students' understanding of personal reproductive motivations, the relevance of these to population variables of a society and the time span over which one's thinking must extend in considering population dynamics.

Essentially, the game requires three decks of cards, a playing board, a dial and some markers. By picking up cards, spinning the dial and moving the markers on the board, players learn how time, fate and other circumstances affect decision-making regarding life-styles and family size. A scoreboard shows how well players have managed to effect their plans.

There are four modes of playing the game: (1) unprotected intercourse; (2) contraception; (3) abortion; and (4) separation. Mode UI is used in achieving a live birth in a short time; in Mode C, folk contraceptive practices are used, and the average time interval preceding conceptions is increased; Mode A is used to achieve an induced abortion and is used when the costs of additional births or periods of separation are high and Mode S involves separation and is deployed when costs of additional pregnancies are high. The player can change modes at will at appropriate times during the game.

In the early phase of Planafam, while the Indian couple have few children, the player's objective is to try to obtain a family of optimal size and composition (3 boys and 2 girls). Then Mode UI is used for quick conception and C to delay conception somewhat.

After four or five children are born to them, or less if the children are all of one sex, the value of additional children is low, or even negative. The player then tries to postpone or avoid additional children, by using a mixture of C,A, and S. Use of any one means of fertility control exclusively tends to be more "costly" than using a mixture of three.

At any phase of the game, an optimal strategy choice indicates that the least-cost alternative would be best. This disregards, however, the psychological meaning of the game to the player, and his willingness to take risks – he may want to try for a first son, after several daughters, despite an anticipated negative value from an additional live birth, because he feels a son is worth taking the chance.

The larger the couple's family, as the implicit prices indicate, the less likely it is that the player will wish for additional children, and the more likely that he will try to avoid conceptions. Deaths of children, however, can induce a change of strategy at any time by reducing the family size, and even making an additional birth desirable.

There are four broad goals toward which Planafam may be useful with high school and college age students: population dynamics, personal awareness, cultural awareness and birth control counselling.

Descriptors: *Educational Games; Role-Playing; Simulation Games; Population Education; Population Dynamics; Sex Education; Secondary Grades*

Source:
Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500
Thailand

EXAMINING ONE'S REPRODUCTIVE FUTURE PROSPECTS AND OPTIONS

25

Planafam II: a role-play game for population education, developed by Katherine Finseth. 1971. (Game instruction in English).

Planafam II is a mode for anticipation and examination of one's own reproductive future prospects and options.

For optimal discussion and learning, the role-player should be part of a small group of people (3 to 10) including a teacher or moderator. One person takes the role of the woman whose reproductive life provides the focus for the game. The other group members' function is to question the player's decisions as they are made – their bases, the realistic or unrealistic nature of these decisions, other options available, other plans the player might envision for the future which could conflict.

There is no single "best" family size for the Planafam II role-woman. Rather, the player begins the game by choosing a preferred family size which will be the goal for the role-woman's life. Preferences as to sex of children, spacing, and age of childbearing are elicited by the moderator in order to determine whether the player has strong feelings about these matters. Other group members are encouraged from the start to discuss the player's goals, as well as his later decisions.

Regular playing cards and specially marked dominoes are used to mark the passage of time and to determine the randomly-occurring events of the woman's life. The player chooses a strategy to achieve her or his desired family. A crude scoring system is included in Planafam II to suggest one way in which the actual outcome of the game might be compared with the player's ideal plan for the role-woman's life.

The playing board shows in linear fashion each of the years of a woman's life, starting at age 14, and ending at 50. Dominoes representing six months of the role women's reproductive lifetime are initially aligned facedown on the game board in the NOT EXPOSED TO PREGNANCY column. As time passes and the woman ages, the dominoes are turned up one by one. They are then placed in any one of the four parallel columns to indicate the woman's fertility state during a particular six-month period. The columns represent the states: NOT EXPOSED TO PREGNANCY, NO PROTECTION, GOOD CONTRACEPTION, and EXCELLENT CONTRACEPTION. When all the dominoes have been turned up, the woman has reached 50 years of age, and the game ends.

A double-deck of ordinary playing cards is used to refine probabilities in the game in two ways: (1) by confirming that an event, suggested by the domino turned up, has in fact occurred; and (2) by providing a finer time resolution, into three-month periods, for the periods of pregnancy, birth, and lactation.

Several important themes which come up for discussion quite consistently during the game are of particular importance from the population standpoint. These include the following: (a) desired family size vs. expected family size; (b) timing of childbearing; (c) sex of offspring; (d) planning; (e) choice of contraception; (f) deaths and miscarriages; (g) abortion; and (h) length of reproductive span.

Descriptors: *Educational Games; Role-Playing; Simulation Games; Population Education; Family Size; Family Planning; Maternal Health*

Source: Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500
Thailand

GUIDING A NATION THROUGH A DEVELOPMENT PROCESS

26

Population: a game of man and society, developed by Urban Systems. Distributed by Damon/Educational Division, Westwood, Mass., 1973. One packet of materials.

The general objective of the Population game is to enable the player to guide a nation through a predetermined development process on the hypothetical planet celestra. This game can be played by two to six persons, each of whom represents a different country on the planet. The game develops in accordance with the following scenario:

> The people of Celestra are intellignent, inventive, and peace loving. But technology is on the rise. Celestra will soon become industrialized. And with

the complexities of lowered birth rates come the dangers of population explosion. Can the countries of Celestra grow wisely enough to avoid this?

The game plan follows essentially what might be called, for lack of a better term, the "Basic Monopoly Model", involving the movement of various coloured markers around a game board filled with hazards and opportunities on the course.

Each player begins the game with a limited amount of money, a small population, and agriculture adequate enough to feed his population. From these beginnings, he must acquire resources to develop his country to the fullest potential possible, and control its growth so that his population does not outgrow the limits of his country's space and available resources — that is, without allowing his country to suffer a disastrous Population Explosion.

Each country progresses from a beginning stage in which there are seven population units supported by two agricultural units to a third and final stage of development in which a total of 67 population units are supported by 18 agricultural units, 9 industrial units, 5 medical units, 5 educational units, and in which the population growth rate is stabilized at 0.

In order to win the game, the player must fill all the resource spaces through, placed one or more population units in Zone III and achieved a population growth rate of 0 with all resource spaces filled. This kit consists of game board, playing cards, money, population pyramid sheets, dice and rule sheets.

Descriptors: *Educational Games; Population Education; Economic development.*

Source: Damcn/Education Division
80 Wilson Way
Westwood, Mass. 02090
U.S.A.

TERMINOLOGY ON POPULATION AND ENVIRONMENT

27

Population and environment crossword puzzle, developed by Caroline Saltonstall. 1973. 4p.

This puzzle was designed for use in high school or college classes. Evaluation of course work is required in almost every educational setting, but testing in the traditional sense of multiple-choice or essay examinations is rather boring for both students and teachers. This puzzle could be used instead, either in review or examination sessions, as an evaluation of the students' familiarity with the vocabulary and some of the concepts of population studies. The terms or vocabulary asked for specifically deal with a range of population topics such as demography, birth control and family planning methods, reproduction process, environment factors that affect population, quality of life issues, sex education, and causes and consequences of population dynamics. The answer is given at the end.

Descriptors: *Educational Games; Crossword Puzzles; Environment; Human Sexuality; Family Planning; Quality of Life; Higher Education*

Source: Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500,
Thailand.

THE VALUE OF EDUCATION VIS-A-VIS FAMILY SIZE

28

Population Education Game, developed by Dr. Donald S. Chauls. (Bangkok, Mahidol University Population Education Project, 1975). Rules of games in English and Thai.

The objective of the game is to have each of a couple's children finish as high a level of education as possible.

Each player represents a newly married couple. At the beginning of the game, each player receives the couple's yearly income of ₱500, but then must pay ₱200 to cover the yearly costs of the man and his wife. He then decides whether or not a child is to be born the first year; when a child is born, place a marker (each player uses markers of one colour to represent his children) on the board at age I and then pay ₱50 for the child's expenses for that year. Place the year marker at year I. After each player has received his income, decided whether or not to have a child, and paid his yearly costs; each player in turn picks the top 'year card' and must do whatever it says. This card is intended to represent the passage of one year. At the end of the first year, advance the year marker to year 2, and advance any children born in previous year to age 2. Repeat the process described under 'to start', paying ₱50 for each child's expenses.

When a child reaches age 7 (and beyond), the couple have the yearly choice of either sending him to school or keeping him at home. Any child over 12 who is not attending school will be earning money and increasing the family's income. Whenever a child attends school, his expenses are higher than if he were not in school. On the other hand, whenever a child completes any level of education (elementary, secondary or college) and then goes to work, he will earn a higher income. The following schedule represents the costs and incomes of people of different ages and levels of education: (a) yearly costs: 1) a child under 12 years of age and out of school will cost ₱50; in school, he will cost ₱100 per year; 2) a child attending high school will cost ₱300 per year; 3) a child attending college will cost ₱500 per year; 4) anyone over 12 but not attending school will cost ₱100 per year. (b) yearly incomes (only for children not attending school): 1) no one can earn any money until he is over 12 years old; 2) anyone who has not completed elementary school (but is over 12) earns ₱120 per year; (3) anyone who has completed elementary school, but has not completed high school, earns ₱250 per year; 5) anyone who has completed college earns ₱2000 per year.

At the beginning of each year, advance each year of your children to the appropriate place on the board. (Remember that regardless of whether or not the child attends school, he must get one year older each year.) The game covers exactly 40 years. No child may be born after year 20. At the end of 40 years of play, each player is given 5 points for each child in sector V, 3 points for each child in sector IV and one point for each child in sector III. The player with the most points if the winner.

Descriptors: *Educational Games; Population Education; Family Size; Secondary Grades.*

Source: Director
Population Education Project
Faculty of Social Sciences and Humanities
Mahidol University
25/25 Puthamoltola 4, Salaya 73170
Nakhon Pathom, Thailand
or Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500, Thailand

GAMES MOST USEFUL IN UNDERGRADUATE COURSE IN POPULATION

29

Schmidt, Armin. "A game review – population: a game of man and society", *Teaching Notes* 4: 36-39, Spring/Summer 1973.

The "Population: a game of man and society") please refer to Abstract No. 17 for its description) was evaluated by some 70 undergraduate students in a course in Population Problems at the State University of New York and additional comments were also given by college teachers from Lawrence University.

With regard to "Population's" value as a game, it was generally agreed that once the complexities of the rules were grasped (and that is no small task) it is rather fun to play. However, the fun involved derives primarily from the introduction of chance factors which change the course of events, rather than from the sharpening of skills in development planning. There is a problem in that it usually takes about two hours to complete one game, too long for many classroom situations.

The task of evaluating the game from a teaching perspective is more complex. The evaluation of this particular simulation might begin with an identification of the basic premises of the game, assuming that they represent the major content of the learning experience. As the game progresses, one finds that the following basic principles are operating:

1. Development of an educational system results in a lowering of population growth.
2. Development of medical services results in increased population.
3. In the event that population outstrips the support system in any one country, dire consequences follow not only for the country in question but for the planet as a whole.
4. The transition of a given country from one stage of development to another is to the benefit of all the countries on the planet.

The first two premises were found supportable, but there are some serious reservations about the validity of the others.

Many of the players felt that the final outcome of the game was primarily dependent upon chance factors, in that the rules of the game left little room for experimentation with alternative strategies for development. Further criticism centered around the observations that a system of international credit was lacking; the possibility of building capital stock in the next stage of development was eliminated; the consequences of a population explosion were not commensurate with the size of the population surplus (any excess population, be it one unit or ten, resulted in the stage); the only decisions made which had any real significance were those which dealt with raising or lowering of growth rates; and finally, that little benefit was derived from playing the game more than once. On the other hand, it might be possible to alter the rules concerning the borrowing of money from other players, accumulation of capital stock, and the effects of population explosions in subsequent games so that the events of the game more nearly approximate reality.

In general the value of "Population" lies in its function of increasing the players' level of awareness of the complex relationships among population growth and some of the other factors involved in economic development. Thus, it might be of some value as an optional activity during the early stages of an undergraduate course in population.

Descriptors:	*Educational Games; Population Education; Economic Development*
Source:	Unesco Regional Office for Education in Asia and the Pacific Population Education Clearing House P.O. Box 1425, G.P.O. Bangkok 10500, Thailand

DEMAND FOR LAND INCREASES WITH POPULATION INCREASE

30

Sri Lanka. Ministry of Education. Population Education Unit. *Land as a resource.* A sub-unit in "Man's influence on the resources and the environment; a population education learning unit". Colombo (1976). 31 p.

This learning unit developed by the Population Education Unit of the Curriculum Development Centre of Sri Lanka contains a sub-section entitled, "Land as a Resource" which makes use of role-playing. The objective of this lesson is to foster understanding that man needs land to obtain his needs and that man's need for land is increasing continuously. The lesson starts with a discussion taking place in a village council about how to utilize best the available land in the village. Five pupils from the class are selected to represent the members of the village council. Each one will role-play a council member and one pupil will be assigned to be the Chairman. Before the meeting starts, the five pupils will be given cards which will instruct them on their respective roles and positions. The first member will propose the acquisition of some land between the temple and cemetery to be converted into a playground. The second member will support it. The third member will oppose the proposal suggesting that the new land should instead be used for paddy cultivation or for some other food crops because only 50 acres of paddy have been cultivated in the village. He will also suggest a dispensary as an alternative. The fourth member will also oppose saying that a new land should be used for a housing scheme or village school instead. The fifth pupil who serves as the Chairman should emphasize that the complementation of any proposal needs money and priority should be given to essential things first. Finally, the Chairman suggests that it is necessary to allot some money for the widening of the road as the bus services to the village will be improved by the addition of two more buses.

At the end of the role-playing, the teacher discusses the many ways in which land is utilized in the village. At the end of the discussion, the pupils should show the various purposes for which land is used at present and that the demand for land is ever increasing with the increase in population.

Descriptors: *Educational Games; Role-Playing; Population Education; Environment; Land Development; Sri Lanka*

Source:
Population Education Project
Educational Planning and Research Branch
Ministry of Education
Malay Street
Colombo 2
Sri Lanka

Section Three: Discovery/Inquiry-Oriented Approach: Literature Review

This section contains ten selections. Three are evaluative research assessing the effectiveness of the inquiry/discovery method vis-a-vis the traditional lecture approach; one is a literature review on the effectiveness of the discovery approach as a teaching method; five are descriptions of the method including practical examples as applied in population education, and one is a self-instructional module focusing on the use of the inquiry approach.

The publications included in this section use either the term discovery or inquiry approach in referring to this particular teaching methodology. A literature review admits educationists do not use the term consistently. "Discovery" has been used interchangeably with such term as "inquiry", "problem-solving", "intermediate discovery", inductive or deductive method", "conceptual" or "process" approach. Basically, however, the literature states that whether it is called by one name or another – it is involved in one common process: it facilitates the discovery of meaningful concepts rather than mechanistic connections. It minimizes memorization and stresses the importance of experience in solving a problem and arriving at warranted conclusion. A module included in this review defines it as a teaching style where the learners, with the minimum guidance of a teacher seeks out to discover and create an answer to a recognized problem through the following procedures: (1) defining the problem (becoming aware of a problem, making it meaningful and manageable); (2) developing a tentative answer (examining and classifying available data, seeking relationships, drawing logical inferences and stating the hypothesis); (3) testing the tentative answer (by assembling, arranging and analysing evidence); (4) developing a conclusion (finding meaningful patterns or relationships and stating the conclusion); and (5) applying the conclusion (testing against new evidence and generalizing about the results). The inquiry/discovery approach possesses the following outstanding characteristics: (1) it is process rather than content-oriented; (2) it is conceptual instead of factual; (3) it is student-centred; (4) it is active; and (5) it uses content not as an end in itself but rather as a means to attain other important purposes.

Six of the nine selections included here present a good number of examples of how inquiry method is applied on problematic population education issues such as sex preference, family size, migration, population growth vis-a-vis quality of life and the conceptualization of population education itself.

With regard to the effectiveness of discovery/inquiry approach as a teaching method, the three research studies included in this section show that: (1) the discovery/inquiry approach is as effective as the traditional lecture method as far as acquisition of knowledge and factual information is concerned; (2) the method is more effective than expository or traditional lecture method in developing thinking and analysis skill; (3) it has been found very effective in teaching population education and in developing desirable attitudes towards population matters. However, a third study which compares the effectiveness of inquiry and expository methods with a third approach, the modular approach, shows that generally, modular approach is better than both discovery and expository approaches in acquisition of knowledge and developing thinking skills and retention of the acquired knowledge and favourable change in attitude.

In addition to these studies, a literature review abstracted in this section presents the following generalizations:

1. The discovery approach seems to be more effective than the traditional expository approach in bringing about learning, retention, and transfer. And, when different kinds of discovery approaches are compared, the guided discovery approach seems to be more effective than the independent discovery approach.
2. The discovery approach seems to be more effective than traditional expository approach in stimulating critical thinking, and in so doing, more active student participation in the classroom.
3. The discovery approach seems to be more effective than the traditional expository approach in developing in students a favourable attitude towards the subject matter and towards the teacher.
4. The effectiveness of the discovery approach depends to some extent on teacher competence: the more competent the teacher, the more likely the discovery approach is to be effective.
5. The effectiveness of the discovery approach depends to some extent on student competence: the more competent the student, the more likely he is to learn under the discovery approach than under the traditional approach. The effectiveness of the discovery approach depends to some extent on how much time is available for instruction.
6. The effectiveness of the discovery approach depends to some extent on administrative support: the more support the teacher gets from his supervisors, the more likely the discovery approach is to be effective.
7. The effectiveness of discovery approach depends to some extent on the compatibility of teaching methods in the mother units into which population education is integrated, with the use of the discovery method.
8. The effectiveness of discovery approach depends to some extent on the general culture and social environment of a society.

STRATEGIES FOR CONCEPTUALIZING POPULATION EDUCATION

31

Cruz, Leonardo de la. *Towards a better understanding of population education.* Bangkok, Unesco Regional Office for Education in Asia and the Pacific, 1983. 9 p.

This paper presents three strategies for systematically conceptualizing population education. The first strategy follows a listing-grouping-labelling sequence. First, the teacher and learner enumerate and list as many items as they could think of that are associated with the term *population* and those which affect or are affected by population phenomena. Then the learners group together those items which have common characteristics. Then a common label is given to each of these groups of words. The second strategy makes use of the inquiry approach. This strategy follows five steps: (i) problem formulation where the problem or questions being investigated are stated in explicit and precise terms and in researchable form; (ii) hypothesizing which involves making educated guesses or proposed answers that can serve as a useful guide in the search for relevant data; (iii) data-gathering involves gathering evidences that when population growth rate is high, the provision of social services is adversely affected and that when population growth rate is low, the provision of social services is enhanced; (iv) developing a conclusion involves two basic steps, namely, discovering meaningful patterns of relationship among informational data derived from the survey, case studies and documentary analysis and drawing a conclusion from this analysis; (v) applying the conclusion/generalization. The third strategy proposed is valuing or values clarification. Values clarification involves three main steps, namely, (i) making a free choice from alternatives; (ii) making the choice only after thoughtful consideration of the consequences of each alternative; and (iii) making sound decision for action about population issue.

Based on the different ways of conceptualizing population education, the paper presents the following conclusions: (i) population education is not family planning as the latter is associated with such terms as birth control, birth planning, child spacing, fertility control, planned parenthood; (ii) population education is not sex education as the latter is mainly concerned with human sexuality and reproduction; (iii) population education is not demography but demographic contents are part of population education programmes. Finally, it provides the distinguishing attributes of population education. These include the following: (i) it is an educational programme designed to make learners understand the interrelationship among population change, situation, development and aspects of quality of human life; (ii) its ultimate goal is to make learners contribute to the improvement of the quality of human life; (iii) it is problem-centred thus it makes use of discovery and inquiry-learning processes; (iv) it is value-laden hence more open to the use of values clarification approach; (v) it derives its content from demography and population studies; and (vi) it may include family planning and sex education.

Descriptors: *Inquiry Approach; Sequential Approach; Values Clarification; Educational Goals*

Source: Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500, Thailand.

TRADITIONAL MODEL VERSUS INQUIRY MODEL

32

Cruz, Leonardo de la. *Approaches and methodologies in population education.* Bangkok, Unesco Regional Office for Education in Asia and the Pacific, 1979. 19 p.

This paper views process in instructional system in two levels: approach and method. Approach is operationally defined as a pattern for curricular integration while method as teaching-learning strategies. In this paper, the writer proposes a multidisciplinary approach in presenting a conceptual approach for population education. This approach places population problems at the centre of the discussion. The explanation and understanding of these problems can be more effectively attained if they are analysed according to the following disciplines: historical explanation; sociological explanation; economic explanation and anthropological explanation. A concrete example is given on the issue of marriage wherein the decision to get married is influenced by social norms, political, economic and cultural norms. A multi-disciplinary oriented approach presupposes that aside from integrating population concepts in each of the social science disciplines, one may also have a separate course in population education that is multi-disciplinary.

The issue of teaching-learning methodology then is taken into consideration. In deciding what method to use, the following factors should be taken into account: objectives of the lessons; content and structure; the different skills and capabilities of the learners; personal teaching style of the teacher; and institutional setting and requirements. To illustrate this, the paper presents two types of teaching method: the traditional model versus the inquiry model. The writer concludes that although the two can be used for population education, some research findings have shown that the discovery or inquiry approach is as effective as the expository approach with regard to the acquisition of population information and concepts. However it is more effective than the expository in the retention of population information and concepts over time and in the development of thinking skills and of desirable population-related attitudes. A concrete sample lesson is given showing how inquiry approach is applied on population growth and economic progress. The general strategy recommends the following steps: (a) defining the problem; (b) hypothesizing; (c) data-gathering; and (d) developing a conclusion.

Descriptors: *Discovery Approach; Inquiry Approach; Expository Approach; Theoretical Discussion; Instructional Materials; Population Education; Economic Development*

Source: Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500, Thailand

DEVELOPING INQUIRY SKILLS

33

Koae, Maria. "Developing inquiry skills (and building up general knowledge at the same time)", *Secondary Social Science Newsletter* 15: 15-19, October 1982.

This is a collection of worksheets which provide some good ideas for giving students opportunities to develop inquiry skills and build up their general knowledge at the same time. Worksheet One entails the students to find the distances in kilometres between provinces in a country. Worksheet Two requires the students to fill in the population of the given provinces. Worksheet Three requires the students to fill in the capital of a list of given countries. Worksheet Four presents some terms the definitions of which the students are asked to provide. Worksheet Five presents various countries and the students are asked to fill in the names of their leaders or presidents. Worksheet Six lists down the names of famous people and the students are asked why each one is considered famous. Finally, worksheet Seven requires the use of a map which the students will use to identify the bodies of water, countries and their capital, rivers, and mountains as shown in the map.

Descriptors: *Instructional Materials; Secondary Grades; Inquiry Approach; Population Education; Geography; Pacific Region*

Source: Secondary Social Science Newsletter
Curriculum Unit, Department of Education
Boroko, Papua New Guinea

INQUIRY INTO HOW POPULATION GROWTH AFFECTS THE QUALITY OF LIFE

34

Nuanpen Wichiarajote. *Population and quality of life: an example of a lesson plan taught by the Investigative Method of the Inquiry Training (OEPC).* Bangkok, Institute of Child Study, Sri Nakharinwirot University (1975). 4 p.

The main objective of this lesson plan is to provide the learners with problems pertinent to population education, in order that the learners will learn to understand these problems and find some alternative ways of solving them. The specific objectives include the following: to help learners understand the meaning of an increasing rate of growth; to learn the generalization that over-population is one factor which causes social, economic and psychological problem; to form a positive attitude towards social responsibility in solving population problems and to see the responsibility of different agents of change. Hopefully, by using the "inquiry method," the learner can describe an over-populated condition, as well as the generalization that population growth is one factor which negatively affects the quality of life; to tell three bad consequences of over-population; to tell at least three ways of reducing the rate of population growth and which social agents should take the responsibility of preventing the fast rate of population growth. The springboard for discussion is a script of a play which deals with the many problems encountered by a big family. At many points of the story, several decisions have to be made but dilemmas with regard to the children's welfare have to be taken into consideration. These dilemmas are presented in a problem-oriented approach which the parents are not able to resolve and are left for the students to discuss and propose solutions for.

Descriptors: *Instructional Materials; Population Education; Quality of Life; Inquiry Approach; Problem-Solving; Thailand*

Source: Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500, Thailand

THE EFFECTIVENESS OF INQUIRY METHOD VIS-A-VIS LECTURE METHOD

35

Pandey, S.K. *An experimental comparison of lecture method and inquiry method in teaching population education to tenth grade pupils.* (1984). 25 p. Typescript.

The objectives of the study are to find out the following: (1) whether there is significant difference among the three groups (one group taught by inquiry approach, another group taught by lecture method and a control group) in terms of mastery of population dynamics; (2) whether there is significant difference or not among the three groups in terms of achievement in population knowledge; (3) whether there is significant difference or not among the three groups in terms of gain in understanding of population dynamics; and (4) whether there is significant difference or not among the three groups in terms of gain in analysis skills of population dynamics.

The sample consisted of 77 tenth grade students from Bhopal City, India who were divided into three groups. The first group had thirty students taught by inquiry method, the second group had 25 students taught by lecture method and the last group was considered the control group consisting of 22 students. To gather data, a pre-test and post-test were undertaken to find out the achievement difference of the students before and after receiving the instruction. The data gathered were tabulated and compared using the analysis of covariance on the adjusted mean scores.

The findings showed the following: (1) inquiry method is more effective than lecture method for teaching population dynamics; (2) for developing higher mental ability like analysis, inquiry method proves to be better than lecture method; and (3) for developing lower mental ability like acquisition of knowledge and understanding, either of the two methods could be used.

Descriptor: *Expository Approach; Inquiry Approach; Population Education; Population Dynamics; Research; India*

Source: S.K. Pandey
Regional College of Education
Shyama Hills
Bhopal, M.P.
India

STIMULATING CRITICAL THINKING

36

Philippines. Ministry of Education, Culture and Sports. Population Education Program. *Module on the inquiry approach in the teaching of population Education.* Manila, 1984. 35 p.

This module supplements and accompanies a set of twelve self-instructional modules prepared for the modular training of teachers in population education in the Philippines.

This module deals with the inquiry approach in the teaching of population education. The inquiry approach is a teaching style where the learners are actively involved in the process of investigating, searching, defining a problem, formulating hypotheses, gathering and interpreting data, and formulating a conclusion. The outstanding characteristics of this approach are: it is process rather than content-oriented; it is conceptual instead of factual; it is student-centred; it is active and it uses content not as an end in itself but rather as a means to attain other important purposes. The primary goal of the inquiry approach is to develop in the learners those skills and attitudes that will enable them to think critically.

The inquiry approach is considered an effective method in teaching population education because population education is aimed at influencing the students attitudes and behaviour for a long time and until they become parents. With the use of inquiry approach, inasmuch as they are personally involved in the process of learning about the population situation and feel that they created the understanding of the situation themselves, then the learning will be more meaningful than if it were lectured to them. As a result, the influence on the students' attitudes and behaviour will be deeper and more lasting. Similarly, the attainment of the population objective of population education will be adversely affected if the education objective is not simultaneously attained. Lastly, research findings in population education likewise confirm that the inquiry approach as compared to the traditional expository method is more effective in: (a) bringing about learning retention and transfer of population facts and concepts; (b) stimulating critical thinking; and (c) developing in students favourable attitude towards population education and towards the teachers.

In conducting the inquiry approach, the following steps are followed: (a) recognizing and stating the problem; (b) formulating the hypothesis; (c) gathering data; (d) reporting data findings; (c) testing the hypotheses; (f) formulating the concepts and generalizations; and (g) stating one's commitments. Finally, the teacher using the inquiry approach is expected to assume the following roles: planner, introducer, questionner and sustainer of inquiry, manager, rewarder, value investigator and formative evaluator.

To make the theoretical discussions more concrete and understandable, practical examples and activities are also given. The appendices further provide sample exercises and tests for teacher's use.

Descriptors: *Instructional Materials; Teacher Training; Modular Training; Inquiry Approach; Population Education; Philippines*

Source:
Population Education Program
Ministry of Education, Culture and Sports
Palacio del Governador on Aduana St.
Intramuros, Manila
Philippines

ENQUIRY TEACHING THROUGH SELF-LEARNING PROCESS

37

Praw, Dendasurono and others. *Learning process through enquiry approach (a teachers' guide in the application of enquiry teaching).* An instructional material prepared during the Unesco Group Training Course in Population Education in Asia, Bangkok, 1977. 17 p.

This publication was prepared for the secondary level school teachers who want to develop teaching skills, especially, in teaching population education through enquiry approach by the self-learning process.

The various learning activities in this module are categorized into four parts. Part One deals with understanding the concepts of enquiry teaching methods. Here, the definition of inquiry approach is presented together with its main features and characteristics. Its uses in population education are also described. This is followed by a presentation of procedures and factors to consider in managing the use of inquiry approach. The different steps for problem-solving are also given to the teachers. To aid teachers in undertaking inquiry approach, the use of visual aids is suggested The visual aids are divided into two groups: (a) those which amplify the effectiveness of the mechanics of the transmission and reception of sensations; and (b) those which contribute to the teaching-learning process. These examples include slides, film, charts and diagrams, wall displays and filmstrips. Part Two focuses on the practical aspect providing concrete sample lessons which make use of inquiry method. There are three examples given which deals with the topic of migration. The first example presents the dilemma of a nurse in her decision whether to work in the city or go back to her province. Activity Two involves role-playing in which a family is in the midst of decision-making as to whether to migrate to the city or not. The last activity deals with monitoring the increase of population in an urban and rural area caused by migration. The last part of the module consists of self-evaluation tests to determine the teachers' gain in knowledge about inquiry approach.

Descriptors: *Inquiry Approach; Problem-Solving; Role Playing; Instructional Materials; Population Education; Migration; Secondary Grades*

Source:
Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500, Thailand

DISCOVERY APPROACH DEVELOPS DESIRABLE ATTITUDES

38

University of the Philippines System. College of Education. *The effectiveness of the discovery approach in teaching population education.* Funded by Population Center Foundation. Quezon City, 1976. 143 p. Unpublished.

The objective of this study is to determine which of the two approaches – the discovery-oriented or the expository approach – is more effective with regard to: (a) acquisition of factual information and concepts; (b) retention of factual information and concepts; (c) development of thinking skills; and (d) development of desirable social attitudes.

The study made use of nine teachers and 656 high school students from four schools in Quezon City as respondents. Three sets of comparable classes were used from two high schools, two sets from another high school and one set from the fourth high school. The experimental group was taught by the discovery approach while the control group was taught by expository approach. A unit test was administered to both the experimental and the control groups as a pre-test, post-test and post-post-test. The results were analysed by percentage ranking and analysis of covariance.

The findings include the following: (1) In using the discovery-oriented and expository approaches, there were no significant differences in the acquisition of factual information and concepts between the two approaches; (2) The findings with regard to retention of facts and concepts were mixed. While two high school showed significantly higher retention in the discovery approach group than retention in the expository approach group, the reverse was shown by the other two sampled high schools; (3) The discovery approach was more conducive to fostering the development of thinking and analysis skills than the expository approach; (4) The expository approach was significantly better than the discovery approach in developing desirable attitudes towards population matters.

Descriptors: *Discovery Approach; Expository Approach; Research; Philippines*

Source: College of Education
University of the Philippines System
Quezon City, Philippines

LITERATURE REVIEW SHOWS EFFECTIVENESS OF DISCOVERY APPROACH

39

Villanueva, Carmelita L. *On the effectiveness of the discovery approach as a teaching method for population education.* Manila, Population Center Foundation, 1976. 64 p. (Population Education Research Utilization, monograph series 1, part 2)

The objective of the study is to show, through an analytical literature review, the effectiveness of the discovery approach as a teaching method in other subject areas and how these findings can help in the use of the discovery approach in teaching population education.

The literature review made use of selective sampling of studies on the effectiveness of the discovery approach as it has been used across different subject areas such as social studies, science, mathematics, geography and biology at different levels. These experimental studies compare two similar groups, one group being taught by the traditional method and the other using the discovery approach. The groups were then compared on the basis of student outcomes, such as learning, transfer and retention and critical thinking. Post-test scores minus pre-test scores were compared using statistical tests e.g., t-test, analysis of variance and analysis of covariance. Comparison was undertaken of studies according to variables such as learning, retention and transfer, critical thinking, more active student participation in the classroom, and in developing favourable attitude towards the subject matter and teacher. The studies reviewed were also compared on the basis of a number of intervening variables which accounted for the success or failure of the discovery approach. The limitation of the review or analysis centres mostly on the fact that many studies are not comparable with one another because there are differences in the definitions and uses of the discovery approach, different samples, different subject matter and grade levels.

The following generalizations were drawn from the review of the various research studies: (1) The discovery approach seems to be more effective than the traditional expository approach in bringing about learning, retention and transfer and when different kinds of discovery approaches are compared the guided discovery seems to be more effective than the independent discovery approach; (2) The discovery approach seems to be more effective than the traditional expository approach in stimulating critical thinking and more active student participation in the classroom; (3) The discovery approach seems to be more effective than the traditional expository approach in developing in students a favourable attitude towards the subject matter and towards the teacher; (4) The effectiveness of the discovery approach depends to some extent on teacher competence: the more competent the teacher, the more likely the discovery approach is to be effective; (5) The effectiveness of the discovery approach depends to some extent on student competence; the more competent the students, the more likely they are to learn under the discovery approach than under the traditional approach; (6) The effectiveness of the discovery approach depends to some extent on how much time is available for instruction; (7) The effectiveness of the discovery approach depends to some extent on administrative support and on the general culture and social environment of a society; (8) The effectiveness of the discovery approach also depends to some extent on the compatibility of its methods with the teaching methods used in the mother units into which population education is integrated.

Descriptors: *Discovery Approach; Research*

Source:
Population Information Division
Population Center Foundation
P.O. Box 2065
Makati, Metro Manila
Philippines

MODULAR APPROACH VERSUS DISCOVERY APPROACH VERSUS EXPOSITORY APPROACH

40

Yong-Duck Paik. *A comparative study on three approaches in the teaching of population education.* A dissertation presented to College of Education, University of the Philippines, 1977. 2 vols. Unpublished.

The objective of this study is to compare the modular approach with the discovery and expository approaches in teaching population education in high school social studies in the Philippines in each of the following aspects: (a) acquisition of knowledge; (b) development of thinking skills; (c) change to desirable attitude towards population matters; (d) retention of the acquired knowledge, thinking skills and changed attitude towards population matters for third year students of a semi-rural high school; an urban high school; lower ability in semi-rural and urban high schools; and higher ability in semi-rural and urban high schools.

Three classes from each of the two schools were randomly assigned to the modular, discovery and expository groups. Two hundred and fifty-eight students and two experimental teachers were involved. Non-randomized control group pre-test, post-test and post-post-test design with the modular, discovery and expository groups were used as the experimental groups. The three groups, handled by one teacher in each of the two schools, were taught the same population lesson units using the modular, expository and discovery approaches. The instrument used was 'Population Education Test for Third Year High School Students' which measured acquisition of knowledge, development of thinking skills and attitudes. The Population Education Test was administered to the experimental groups thrice as pre-test, post-test, and post-post-test. The IQ test was administered once to determine ability grouping. The study made use of current and existing classroom situations during the experiments. The statistical analysis used was covariance analysis technique.

The following findings were generated from the study:

1. The modular approach is better in acquiring knowledge, in developing thinking skills, and in changing attitude than the discovery and expository approaches.
2. The modular approach is better in retention of the acquired knowledge than the discovery and expository approaches.
3. The modular approach is as good, if not better, as the discovery and expository approaches in retention of the developed thinking skills and changed attitude.
4. There seems to be a tendency for the lower ability students of the modular group in the urban setting to acquire and retain knowledge more; while the higher ability students of the modular group in the semi-rural setting acquire knowledge and develop thinking skills more.

Descriptors: *Inquiry Approach; Modular Approach; Expository Approach; Research; Philippines*

Source: Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500, Thailand

Section Four: Self-Instructional Approach: A Literature Review

This section contains six documents. Two are modular self-instructional packages for use by university students and population field-workers; two are used for in-service training of teachers and the last two are research studies which looked into the effectiveness of programmed self-instruction.

The literature examined here state that self-instructional approach operates within the theoretical framework which states that an organism's behaviour can be generally shaped to the desired end through the technique of reinforcement. Materials are programmed or arranged in a series of successive frames that lead the student from a body of known principles to the unknown, from simple to more complex matter within the same content area. At each stage of the learning process, the trainee receives reinforcement through knowledge of results. Giving the accurate responses means proceeding to the next step. The trainee eventually masters the whole subject matter at the pace set by the accuracy of his own responses. Within the framework of programmed learning, reinforcement, besides shaping the trainee's behaviour, also increases learning motivation. The immediate feedback on one's answer heightens the trainee's awareness and draws him to a greater involvement in the learning activity.

The literature further presents the following characteristics which make it different from the rest of instructional methods: (1) learning takes place in small steps; one idea is presented at a time following a logical sequence; (2) it provides for more participative learner activities; (3) it informs the learner of his progress in the process every step of the way; (4) the learner learns at his own speed; and (5) learning is from simple to complex. When using the programme, the student does these four things repeatedly: (1) reads the new information given in a frame or box; (2) answers the question in the frame; (3) checks his answer with the correct answer; and (4) goes to the next frame and repeats the steps.

The literature examined here reveals that self-instructional approach is beginning to be used in some of the countries as applied in population education. In the in-school, its audiences are mostly upper-level undergraduate and graduate students. The self-instructional is offered as a complete course and used on a self-instructional basis by individual students working toward course credit. It may also be used as supplementary material to a population course which is already being taught. Also units or lessons from a self-instructional package may be selected for use in workshops or seminars.

Its usefulness as shown by the literature, is however being more and more appreciated in the area of training. Many national population education programmes in Asian countries are confronted with the responsibility of training hundreds of thousands of teachers in a limited given period of time with limited financial and manpower resources. The literature points out that many have found out that due to these many constraints, an alternative training strategy has to be explored to replace the face-to-face training commonly used. Malaysia, Philippines and others opted for the self-instructional modular approach. This approach can simultaneously reach a large number of trainees who are widely dispersed and requires only a few persons to monitor and manage the utilization of the modules. It is also less expensive because one does not have to provide stipends for the teachers which are normally given to them when they attend face-to-face training. This approach will also prove economical in the long run since modules can be used repeatedly by a great number of teachers.

In the out-of-school sector, some selections included in this section show that self-instructional learning are developed for the use of outreach population and literacy workers aimed at continuously and constantly upgrading the knowledge and skills in the population field. One selection points out that the usefulness of the self-instructional approach lies on three main things. First, there are just too many field-workers and too little time and resources to reach all of them if a face-to-face training is used. Second, many of the field-workers, unfortunately, have not had the benefit of much professional help from universities and teachers' colleges. Third, the recipients of the population programme in the villages are adult men and women who are often quite busy with their day-to-day work. The self-instructional can serve as supplementary or refresher course after the field-workers have given them the initial face-to-face instruction.

Majority of the programmed instructions which are available and known deal mostly with the subject of demography and population dynamics and an understanding of population programmes and policies. The presentations are varied. Some use the pre-test and post-test style where readings and references are given in between. Others use the step-by-step approach where in addition to the pre-test and post-test, additional questions are given after each major idea or sub-topic for students to answer, immediately check for correct answer and move on to the next frame or sub-topic.

A literature review included in this section shows that: (1) Self-Learning Modules can bring about as great a gain in knowledge as traditional instructional models, and in fact can effect more mastery of subject matter than the conventional classroom method. Modular training, moreover, can develop positive attitudes in the trainees; (2) Self-instructional modules generate a greater personal interest in learning and require a much greater effort than the traditional course. Modular training enables participants to progress at their own rate; (3) Modular training can develop teaching skills and produce the desired behavioural outcomes. However, its effectiveness depends to some extent in the proper orientation of teachers towards the use of modules.

SELF-LEARNING MODULES: A NEW APPROACH AT ORIENTATING TEACHERS

41

Malaysia. Ministry of Education. Curriculum Development Centre. *Population; self learning package for teachers.* Kuala Lumpur, 1980. 1 vol.

SLEM programme is the name given to a school-based in-service course where self-learning modules are used. It is a new approach aimed at orientating teachers in population education. The SLEM programme consists of seven modules.

The first module entitled, "Population Change – Its Determinants and Consequences" deal with some basic demographic terms. The module on "Population Situation in the World and in Malaysia" gives a bird's eye view of the population situation in Malaysia and in the world. After this, the module on "Population Programmes in Malaysia" becomes more meaningful as the teacher learns of the steps being taken to deal with the Malaysian population needs. The next two modules, "Population and Environment" and "Population and Resources" deal with how environment affect people's lives especially their health and management and conservation of the resources which are important for development and economic progress. The next two modules entitled, "Population and Social Services" and "Population and Quality of Life" deal with matters affecting the quality of life. The module helps to conceptualize the idea of quality of life as well as assist to realize how population affects the national and individual development efforts to improve the quality of life. The module on "Population and Social Services" deals with steps being taken to meet the needs for education, for health services as well as care for the aged, the handicapped and others less fortunate.

The SLEM programme has been planned to focus on population concepts which are in the school syllabi. Concepts of population and environment are found in geography, science and civics; the concepts of population size and growth are found in mathematics and geography and concepts related to population, health and nutrition are found in health education and home science syllabi.

This programme is carried out at the school level. The heads of schools are to play key roles as course managers. The Headmaster first identify the teachers in his school who should participate. Then he assigns teachers to specific modules in order to present an oral report on each module the next day. All the teachers are required to read the modules at home before every session. After the teacher reports, the Headmaster initiates discussion but not dominate it.

Each module contains the objectives and desired learning outcomes. Reading texts follow these objectives. Questions to determine whether the learners are learning are interspersed throughout the module specifically after every major ideas are presented. A summary of major points are given at the end.

Descriptors: *Instructional Materials; Programmed Instruction; Teacher Training; Modular Training; Population Dynamics; Environment; Resources; Economic Development; Quality of Life; Malaysia.*

Source: Project Director
Population Education Project
Curriculum Development Centre
Ministry of Education
Pesiaran Duta (Off Jalan Duta)
Kuala Lumpur 11-04, Malaysia

MODULAR APPROACH AS AN INNOVATIVE TRAINING SCHEME

42

Philippines. Ministry of Education, Culture and Sports. *A module in population education for elementary and secondary school teachers.* 2nd edition. Manila, 1984. 12 vols.

The modular approach is an innovative training scheme introduced by the Philippine Population Education Program in its search for a viable alternative scheme to train teachers in population education. As a result of this, a set of 12 modules were developed, field-tested and revised subsequently. These modules may be used effectively in training elementary and secondary school teachers in population education using any of the three management schemes, namely, (1) the modules used in independent self-study; (2) the use of the modules managed by a population education-trained district supervisor; and (3) the use of modules managed by a population education-trained school principal.

The first module entitled "Philosophy, Objectives and Content of Population Education" aims to make the teachers understand the why and what of population education. The second module entitled, "Demography: Components, Processes and Measures" provides an elementary knowledge of the dynamics of these demographic processes such as birth rate, death rate, migration rate, growth rate, natural increase and doubling time. The third module: "The Growth of Population World and the Philippines" tells how population grows, what are the various types of population growth exhibited by countries of the world including the Philippines, causes of world population growth as well as population growth trends, doubling time and projections. The module on "Demographic Transition" provides knowledge on the changes in the rates of birth, death and natural increase that go with the process of a country's modernization. The module on "Population Composition: Age-Sex Structure" introduces the teachers to another way of analyzing population – the study of population composition, particularly, the age and sex composition. The module on "Determinants of Population Change" consists of three lessons, namely: fertility, mortality and migration. These three factors contribute to population change. The module on "Population Distribution and Density" provides information about the spread or dispersal of people over certain areas as well as the concentration of population per unit area and the reasons why some parts of the world are more densely populated than the rest. The module on "Consequences of Rapid Population Growth" introduces the teacher to the effects of rapid population growth on food, economic development, education, health and other social services. "Human Sexuality and Reproduction" aims to develop understanding and appreciation of the sexuality of man which is essential to the development of wholesome sex attitudes and behaviour. The module on "Family Planning" discusses the concept of family planning, its history in the Philippines and the contraceptive aspect of family planning. "Population Policies and Programmes" acquaint the teachers with the population policies and programmes of the Philippines. Lastly, the module on "the Study of the Population Education Curriculum and PEP Materials" provides the teachers with some guidelines on how to teach and integrate population education concepts. It focuses the teacher's attention on the subunits and other materials in social studies, health education, science, mathematics and home economics of one's particular grade or year level.

Each module consists of a set of preassessment questions, objectives, the reading text, postassessment, bibliography and appendix. Questions are also asked after each major subject area is discussed to determine the gain in knowledge of the learner.

Descriptors: *Instructional Materials; Programmed Instruction; Teacher Training; Modular Training; Demography; Population Dynamics; Migration; Human Sexuality; Population Policy; Philippines*

Source:
Chief
Population Education Program
Ministry of Education, Culture and Sports
Palacio del Governador on Aduana St.
Intramuros, Manila
Philippines

A MANAGEMENT PROCEDURE FOR USING TRAINING MODULES

43

Philippines. Ministry of Education, Culture and Sports. Population Education Program. *A report on preparing teachers to teach population education: a modular approach*, by Estela Ll. Garcia. A joint project of Population Education Program (Philippines) and East-West Communication Institute. Manila, 1977. 59 p., appendix.

The study seeks to find out a management procedure in using developed training modules for preparing teachers to teach population education in their classes. Basically, it seeks to find out which of the three management procedures in using the modules for training teachers in population education is the most effective: (1) independent self study; or (2) having a trained principal as module moderator; or (3) having a trained supervisor as module moderator. The study also sought to find how the teachers react to or perceive the use of the modules for training teachers in population education. The respondents were 532 teachers randomly sampled from 18 elementary schools picked out randomly from each school division from five regions. Out of these 532 teachers, 33.08 per cent studied the modules under independent study scheme; 33.65 per cent under the scheme monitored by the principal and 33.27 per cent under the scheme monitored by the district supervisors.

The following conclusions can be drawn from the findings of the present study: 1) By and large, teachers learn population education concepts through the modules irrespective of management schemes; 2) Depending on the local situation, one management scheme is more effective than the two others; 3) Teachers like to be trained to teach population education in their classes through the modules; 4) Suggestions given by the respondents on the improvement of the modules as a training device were: (a) increased time allotment for the study of the modules; (b) modules to include teaching devices; (c) some modules be translated to vernacular; (d) some modules be simplified and others be discussed further; (e) demonstration lessons to follow study of modules; and (f) graphs, computations, pyramids, etc. to include further explanation; (g) vacation time as ideal time to study modules; and (h) service credits and graduate units as incentives for studying the modules.

Based on the findings, the following general recommendations were made: (1) that the PEP/DEC adopt the modular approach as an alternative scheme to train teachers in population education especially with the new teachers, and teachers in distantly located and isolated schools; (2) that the modules be used in refresher courses for teachers and in the re-training of secondary school teachers; in continuing in-service education for teachers; and (3) that a study on the feasibility of the use of modules for non-formal population education be undertaken.

Descriptors: *Programmed Instruction; Modular Approach; Teacher Training; Population Education; Research; Philippines*

Source:
Chief
Population Education Program
Ministry of Education, Culture and Sports
Palacio del Governador on Aduana St.
Intramuros, Manila
Philippines

A POPULATION PACKAGE OF 10 SELF-INSTRUCTIONAL UNITS

44

Population – a self-instructional approach. Chapel Hill, Carolina Population Centre, 1978. 3 vols.

This self-instructional population package is designed to provide a university level survey course in the study of human population. The intended audience for this course are upper-level undergraduate students or graduate students in any discipline who need a basic population course. The first part of this course (Units I through IV) is devoted to the history and development of population study; demographic methods of measuring fertility, mortality and migration; and trends and forecasting. The second part (Units V through X) deals with the implications and ramifications of changing fertility and mortality patterns. The polar views of Malthus and Marx are used to discuss population growth as it relates to food supply, resources, economic development and urbanization in developing and developed countries. The final unit (X) is devoted to population policies.

The Population Package consists of 10 units, some of which are divided into lessons. Lesson I of Unit I is a silent animated loop film of the History of World Population. All other units are written packages. Each unit/lesson will: (1) test the student's knowledge in a given area of population study; (2) tell the objectives of the unit; (3) tell what to read in the textbooks (required readings) before starting each lesson; (4) give some practical review exercises and a final test so that the students can check their progress as they go through the course. In addition, the course gives two mid-term examinations and a final exam covering the most important ideas and concepts in the course.

The Population Package can be used in a variety of ways: (1) it can be offered as a complete course and used on a self-instructional basis by individual students working toward course credit; (2) it can be used as supplementary material to a population course which is already being taught by a resident teacher; and (3) units/lessons from the package may be selected for use in workshops or seminars.

Descriptors: *Instructional Materials; Programmed Instruction; Population Dynamics; Higher Education, U.S.A.*

Source: Carolina Population Center
University of North Carolina
Chapel Hill, N.C. 27514
U.S.A.

PROGRAMMED LEARNING FOR OUTREACH WORKERS

45

Population Center Foundation. Population Information Division. *When population grows; a programmed learning module on population dynamics featuring the fable, the rural mouse and the urban mouse.* Manila, 1981. 101 p.

This programmed learning module is one of the eight modules developed for outreach workers working in population and family planning in the non-formal sector. It is aimed at constantly upgrading the knowledge and skills of population programme workers in the Philippines.

A programmed learning module is different from the more common types of learning materials such as books, manuals and the like. Five basic characteristics make it truly different. One, it presents one idea at a time following a logical sequence. Two, it provides more participative learner activities. Three, it informs the learner of his progress in the process every step on the way. Four, it allows for individual learning habits and preferences. One can regulate his own learning capacity and speed. Lastly, it stimulates one's creative potential. This particular programmed learning module is in the form of a programmed learning storybook. It uses the well-known fable to illustrate the implications of population growth and the importance of family planning. Its objectives are to explain what overpopulation is, discuss the three major factors affecting population growth; illustrate by way of example, the adverse implications of overpopulation and explain the concept of family planning and why it is an important measure for avoiding overpopulation.

The story starts with a cousin mouse from the city who visits his relatives in the village. Upon learning of the relatives' hardships in the village, cousin mouse convinces the relatives to migrate to the city. He enumerates the many reasons why they should migrate to the city. After this first part, the module summarizes the key population concepts on migration by defining terms and enumerating different types of migration. After each summary, a test is immediately given. An answer mask is used to cover the page where the answers are given. On the blanks, the learner is asked to write their answers to the practice exercise or question which follows each idea or concept. Then, the student slides down the answer mask to expose the correct answer. If the learner got the answer correctly, he proceeds to the next information of practice exercise. Otherwise, if he misses, then the learner is asked to review the preceding information. The rest of the story shows how the family encounters more hardships in the city, showing how conditions have affected the quality of life of the family in terms of education, nutrition, health, and employment. It also discusses overcrowding and increase in population due to birth, death and migration. The Module also assesses the level of knowledge of the students before and after taking the programmed instruction.

Descriptors: *Instructional Materials; Programmed Instruction; Nonformal Education; Outreach and Educational Personnel; Population Dynamics; Family Planning; Migration; Philippines.*

Source:
Programmed Learning Projects
Population Information Division
Population Center Foundation
P.O. Box 2065, MCC Makati
Metro Manila, Philippines

SELF-INSTRUCTIONAL TECHNIQUES FOR EDUCATING SOLDIERS IN POPULATION

46

Yun, Sung Hee. *An experimental study of population education for young adults: knowledge and attitude gain through individualized learning processes in Korean army; dissertion proposal.* 1972. 25 p. Unpublished.

This document is a research proposal designed to test the feasibility and effectiveness of systematic population and family planning education for the soldiers in the Korean army by making use of "self-instructional" techniques. Specifically, it will test the effectiveness of the self-instructional teaching method vis-a-vis the traditional or conventional approach. It will also attempt: (1) to identify attitudes toward and knowledge of population and family planning, of Korean army soldiers who are presently unmarried; (2) to determine "values of children" held by them; (3) to provide available knowledge concerning population and family planning to them; (4) to explore the feasibility of developing massive educational programme in Korean army systems; and (5) to examine three different types of categories (i.e. attitudes, knowledge, and motivations) to see if those three variables are interrelated to one another in the proposed study.

The design involves pre-testing and post-testing of attitudes toward and knowledge of "public-oriented and private-oriented matters" in conjunction with population and family planning. This study will be conducted with those soldiers who have been posted to the post-training centre, so-called Reserve Corps, for the preparation of imminent civilian lives prior to discharge from the army.

All subjects randomly selected from the population at the centres will be equally divided into two groups, one experimental and one control group. The experimental group will be treated by two different methods. The first experiment is given by "self-instructional learning package" which will be developed beforehand. The second experiment is given by "conventional material." Each experiment contains 240 learners. The same number goes into the control group. Each of those three study sets represents three different geographical areas, namely, urban, semi-urban, and rural.

There will be two self-instructional packages which will be developed – one to teach the public-oriented knowledge and the other to teach private-oriented knowledge. The public-oriented knowledge is primarily concerned with "population awareness" while the private-oriented knowledge is concerned with "family awareness". The essential components of each package consist of the following: step I will have three subtasks. Subtask I will deal with the dynamics of population growth. Subtask 2 will deal with the effect of or relationship between dynamics of population growth and socio-economic, health and other national development. Subtask III will deal with population control policy, planning, implementation and services. Step II will have three subtasks on human reproduction, effects of human reproduction on health, family life, home economics, etc. and fertility control. Step III will have three subtasks focusing on the relationships between dynamics of population growth and human reproduction, dynamics of population growth and effects of human reproduction on health, family life and home economics and human reproduction and fertility control.

The collection of attitudinal data will be made by questionnaire while knowledge level and change will be collected by a standardized test. An analysis of variance will be performed on the achievement test score obtained.

Descriptors: *Programmed Instruction; Research; Classroom Research; Attitudes; Population Awareness; Military Personnel; Korea, Republic of*

Source: Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500, Thailand

Section Five: Computer-Assisted Instruction: A Literature Review

This section consists of two documents showing how the use of computer can simplify and make more meaningful the teaching of population dynamics. This method is designed to utilize innovations in computer technology to provide the users – student and teacher – with a method for lowering the information threshold which traditionally hampers the internalization of complex subject matter. Use is made of computer-generated visual graphics to enable fast and intuitive understanding of the dynamics of population and of the complex concepts and data of population.

This type of teaching method has been largely used in the United States. According to the literature examined here, the programmes have been successfully used with school children of all ages, university students, community groups, government officials and professionals in the field of population. Currently, there are three ways in which the output may be utilized as an instructional resource: (1) actual demonstrations of certain topics, principles, etc. with the students either passive or participating in the discussion. The instructor may both pose questions and answer students' questions with immediate response on the display screen. Students may be presented with problems, issues or topics which they will then complete through individual interaction with the computer system. The programmes are simple to operate, allowing each user to manipulate and interact with the system on an individual basis; (2) a lecturer may use the system to prepare a set of slides on a specific topic for presentation to his class or to a larger audience. The taking of the slides is extremely easy and the only delay would be in developing. This tends to provide for greater structure and yet allows the instructor to experiment with the data. The instructor is not tied to available visual material and can produce graphic output for the idea, concepts, data, etc. that may be used in the teaching process; (3) hard copy facilities are available which will allow an instructor to retain any of the infinite graphic outputs to hand out to his class. This can be done on the day of the lecture and requires only minutes to prepare.

The literature stresses that computer-assisted instruction is most useful in teaching population dynamics or demography which entail some calculations such as constructing life tables, projecting a population, demographic equation, economic development, educational costs and enrollment, food demand and supply, demand for energy, labour force analysis, migration and urbanization, population history, contraceptive technology, age specific fertility rates, age distributions, crude birth, death rates, growth rates.

COMPUTER SIMPLIFIES THE COMPLEXITIES OF POPULATION DYNAMICS

47

Klaff, Vivian and Paul Handler. *Computer assisted instruction of population dynamics: a new approach to population education.* Urbana, University of Illinois, 1975. 53 p. (Report T-19)

At a time when a great deal of attention is being focused on the issue of worldwide population growth and the relationship between population and food, energy, and environmental issues, one of the major problems facing educators, policy-makers and government planners is how to communicate the complexities of population dynamics in a meaningful way. The Population Dynamics Group (PDG) system is a research and educational tool which, through the use of a very flexible and creative computer-assisted programme, addresses itself to this communication problem. The PDG system consists of computer facilities stored with demographic, social and economic data, the basic mathematical equations necessary to select and simulate population patterns, and an interactive graphics terminal that reacts instantly to the command of the user by displaying the requested material on its display screen. The programme is designed to utilize innovations in computer technology to provide the user-student and teacher with a method for lowering the information threshold which traditionally hampers the internalization of complex subject matter. Use is made of computer-generated visual graphics to enable fast and intuitive understanding of the dynamics of population and of the concepts and data of population.

In the area of Population Dynamics, two series of lessons are available: DEMTEC and POPSOC. DEMTEC is a series of methodology programmes designed to teach the concepts of demography and the basic techniques of demography which are utilized in the POPSOC series. The POPSOC series are designed to produce projections of population data. This paper deals mainly with the Population Projection Programme or Model.

The Population Projection Model is designed to produce demographic data for five-year age groups at five-year intervals based on either constant or changing parameter assumptions. The model requires information which is stored in the computer data file for each of the countries. Basic data are 1970 total population, age composition categorized into 18 five-year intervals period, age specific fertility rates and a cohort specific mortality rate schedule. The model uses the cohort component method of projection where the 1970 population is projected into the future. All projections start at 1970 and continue by five-year intervals to any time desired by the programme user. The component method projection procedure used does not include migration and is thus restricted to calculating how many children will be born in the next five-year period and how many people will die during the period in each of the age cohorts. The model is used in both a combined sex version, where projections are based on the total population, and a two sex version.

Descriptors: *Computer Assisted Instruction; Simulation Games; Population Education; Population Dynamics; Higher Education*

Source: Population Dynamics Group
Co-ordinated Science Laboratory
University of Illinois
Urbana, Illinois 61801
U.S.A.

POPULATION PROJECTIONS EASILY RETRIEVED BY COMPUTER

48

Van de Walle, Etienne and John Knodel. "Teaching population dynamics with a simulation exercise", *Demography* 7(4): 433-448, November 1970.

Because many students learn general points best by an empirical demonstration rather than by a purely analytical approach, most of the mysteries of the formation and the evolution of population under the action of mortality and fertility can be conveniently demonstrated on a computer in the form of population projections under various assumptions. Such an exercise can be simple and yet constitute a powerful teaching tool. Not only will it enable the student to observe the effects of central demographic processes, but also it will serve to integrate through concrete applications many of the more technical concepts usually covered in an introductory population course, but rarely made meaningful to average beginning students. Thus the life table functions, survival ratios, age specific fertility rates, age distributions, crude birth and death rates and growth rates can all be incorporated into a single exercise. Another purpose of the exercise is to introduce students to the keypunch and computer.

This exercise requires three basic sets of input data for each simulation: (1) an initial population; (2) a mortality schedule from a life table; and (3) an age-specific fertility. The computer produces for each simulation the following output: (1) successive age profiles of the projected population male and female age distributions in both absolute numbers and per cent at five year intervals; and (2) vital rates for successive five year periods – the crude birth and death rates, the rate of natural increase, the general fertility rate and the gross and net reproduction rate.

This document reviews some of the applications of the projections and how they can be used to demonstrate technical points. These include the following: stationary population, decline of mortality, rise of fertility, the case of women's island, instant population transition, and zero population growth. The details of the exercises are given in the Appendix. The text also includes a series of questions designed to call attention to the most significant points demonstrated by each of the simulations. These questions can be answered by the students without making additional calculations or without drawing on material other than the output itself.

Descriptors: *Computer Assisted Instruction; Simulation Games; Population Education; Population Dynamics*

Source: Population Association of America
P.O. Box 14182
Benjamin Franklin Station
Washington, D.C. 20044
U.S.A.

Section Six: Teaching Through Audio-Visual Aids: A Literature Review

All the eight materials included in this section are of the instructional or manual type which provide both the theoretical or conceptual understanding about the use of audio-visual materials and the procedures for their use and development. Many of the selections also explain why the multi-media approach is an effective approach to teaching population education showing practical sample activities and exercises as applied in specific population education contents. Of the eight publications, four deal with the multi-media or audio-visual approach, one focus on radio, one on flannel set, one on puppet and one demonstrates the use of picture cards and lead sentence approach.

The selections in this section are all agreed that the main rationale behind the use of audio-visual aids in teaching is: generally, the more senses people can use the more likely they are to understand and to remember. Thus, audio aids such as radio, records and recorders appeal to the sense of hearing; visual aids such as pictures, posters, books and slides appeal to the sense of sight.

According to the literature examined here, audio-visual aids may be used in teaching for a great variety of reasons. One point that should not be overlooked is the basic entertainment value that these materials can provide and that, far from detracting from the subject at hand, they can do much to focus the attention and interest of the class on an unfamiliar topic. Although the literature pointed out that audio-visual materials possibly are used most commonly to stimulate interest in and provide information on a specific subject, they can also be used to motivate the audience to accept a new outlook through a change of attitude, to summarize information presented through other more formal channels, to improve learning by showing various points of view in a concise manner, and to provide information of a technical nature which the instructor might not feel fully competent to explain alone.

The literature also shows that educators have found that audio-visual materials have great potential for bringing current and emerging ideas in different professional fields into the classroom and for presenting problem situations to the class in a realistic manner. Audio-visual materials can be effectively used to stimulate class discussion and thus can involve the students more actively and more immediately in the learning process. For example, with the use of film-showing and slide-tape presentation, the students can develop: (1) listening and memory skills; (2) analytical and logical thinking; (3) understanding of emotional reactions; and (4) creative thinking. One selection shows that the use of puppets, for instance, will enable population education workers to tackle nine delicate subjects which is difficult to do with live actors. Puppets seem to be able to say things to an audience and get away with it in a way that people cannot. Radio is also a very useful aid to reaching illiterates with population education messages. One selection abstracted states that radio, by not providing explicit visual information, allows the listeners to engage their imaginations full and actively in filling in the visual elements to their own satisfaction. It also has an immediate impact on the listeners in terms of time and intimacy. It creates a feeling of participation, of personal involvement in the listener.

A number of selections abstracted here also agree that the use of pictures, posters, flipcharts, filmstrips, slides, audio and video tapes, film, etc. can indeed provide a substantial contribution to teaching; however, it is necessary to recognize – and to emphasize – that audio-visual aids are a supplement to education and not a substitute. They enlarge and stimulate the area under study, but in no way can they replace the instructor or can teach by themselves. They are intended to aid in teaching the students and helping them to learn. Without proper and thoughtful explanations and discussions, the instructional points of the audio-visual material may be by-passed or mis-interpreted. The documents reviewed here cover almost all kinds of audio-visual aids. One selection has categorized them into the following groupings: (1) flat materials (posters, photographs, flannel board, flipcharts, flash cards, comic books, etc.); (2) models (puppets); (3) audio equipment (record players, tape recorders, radio); (4) still projection equipment (slide projector, filmstrip, overhead projector); (5) still cameras and motion pictures; (6) video recording (television); and (7) folk-media (plays, stories, theatres).

The context in which the use of audio-visual aids is described in many of the publications focus on the developing world or rural areas where audio-visual materials are scarce and where most of the villagers are not highly literate and print-oriented. It will be noted, therefore, that many of the selections have not only been written to inform readers what are the many kinds of audio-visual aids that can be used by them but more importantly, they provide guidelines and instructions meant to develop the skills of the field-workers in preparing by themselves audio-visual materials that are suitable and applicable in a rural setting. One selection presents the following considerations in preparing audio-visual aids: (1) limited resources and raw materials; (2) availability of facilities; (3) villagers' socio-psycho-cultural condition; (4) literacy and educational level; and (5) replicability of the materials. Most of the selections define each of the audio-visual aid, the uses of each, their advantages and disadvantages, when to use or when not to use them.

Their application to specific population topics have been extensively demonstrated in these selections. For example, puppets and plays are used to dysensitize people about limiting their family size – they are able to get across the idea that family planning is a subject that they can talk about or even joke about. Figurines on flannel board or picture cards can stimulate people to open up and discuss what they feel about the effects of having many children – whether negative or positive. Flash cards or a skit can compare or differentiate better in a story form between a big and small family or the life in a crowded city and a village. Radio has been used by field-workers to aid them in carrying on a group discussion and it has also aroused the curiosity of listeners about family planning through its radio slogans and jingles. A television programme can depict better the situation of a couple who have married early vis-a-vis a couple who delayed their marriage. One selection demonstrated how a slide-tape presentation or film-showing can be used in the classroom to serve as springboard for discussion which deal with demography and population dynamics.

PUPPETRY COMMUNICATES POPULATION MESSAGES BETTER FOR LOW LITERATES

49

Baird, Bil. *Puppets and population.* New York, World Education, 1972. 95 p.

Over the years some of the audio-visual devices that have been tried had to be discarded as not feasible for one reason or another. Throughout the experimentation, however, puppets have remained. Puppetry, like other aids, is only one tool for adult literacy educators. It functions as a supplementary teaching instrument in the difficult process of communicating new ideas and information to young adults with low literacy levels. Like the others it can teach, provide continued information support, and help motivate.

Puppetry, however, has some additional advantages. People are more willing to accept a new idea if it comes from a trusted source. Therefore, where puppetry has a strong cultural tradition it can be particularly effective. Further, the difficulties that many persons with low literacy levels experience in perceiving and interpreting symbols, graphs, or cartoons do not seem to arise with puppetry. And finally puppetry is flexible and adaptable, and hence uniquely suited to the special problems of family planning education.

Puppetry cannot be expected to do the job alone. In this material, puppetry is presented in the context of literacy/family planning/population education programme. The production of this puppet play is only one aspect of a programme of instruction that will incorporate family life planning information at every stage of functional literacy training.

The puppet play included in this booklet, "Small Family, Happy Family," is one example of a teaching tool to let villagers know that they can limit their families and that they will have a better life by having small families. It gets across the idea that family planning is a subject that they can talk about, even joke about.

It also informs the members of the audience that there are many ways of limiting their families, depending on their age, their physical condition, the size of their families, their responsibilities to family members, and the birth control methods presently available. It gives them an idea of how birth control methods work, and advises them to seek individual professional advice. The play will also amuse and entertain them. A performance of the puppet play alone in not enough for a community to understand, accept, and act upon a new idea like family planning. The performance is only the central section of a three part process. The other two parts, preparation and follow-up, are just as important to the overall success of a programme.

The play has six modules about specific methods of family planning. The group sponsoring the production can choose the most appropriate one to use in the play. The choice should be made after consulting local leaders, considering which methods are readily available locally, and whether the audience will consist of men, women or both. Module A is on the contraceptive pill from the women's point of view; module B centres on the contraceptive pill from the man's point of view; Module C is about the loop; Module D is on sterilization; Module E is on condom and Module X is all purpose. At the end of the show, the Master of Ceremonies encourages the audience to ask some questions to be addressed to family planning expert or doctor. The booklet contains the scripts of all the modules. The appendixes also explain the procedures for making a glove puppet and how to build the stage.

Descriptors: *Puppetry; Materials Preparation; Family Size; Family Planning; Non-Formal Education, Adult Education; Literacy*

Source: World Education
251 Park Avenue South
New York, N.Y. 10010
U.S.A.

HOW TO PREPARE AUDIO-VISUAL MATERIALS IN AND FOR THE RURAL AREAS

50

I See! *(A report on experiences in producing and using audio-visual aids for population education at the village level).* Rome, Food and Agriculture Organization of the United Nations, 1979. 92 p.

This booklet is an attempt to put together the experiences of two development workers in producing and using teaching aids for population education in a few countries. Chapter One provides an explanation why population education did not find acceptance among the villagers easily. To make it more acceptable, it has to be integrated into other concerns i.e., food, health, water, income, which produce more concrete benefits to the villagers. With regard to the propagation of population and other-related messages, visual aids have to be used. However, it was found that there was a dearth of these materials and if ever some were prepared, it was difficult to reproduce them. This booklet is in response to this problem.

This report provides procedures on how to prepare audio-visual materials in the context of a rural situation. In the preparation of teaching aids, the following guidelines are given: (1) know your message; (2) know the people's social reality; and (3) know the psychology of the audience. Style of drawing, selection of the type of media, composition, the use of colour, content and meaning are all other elements to consider when developing a visual aid to be used in the villages. For example, generally, drawings which are best suited to the village situation are realistic ones where distracting background details are trimmed away. As far as the selection of media is concerned, the best medium in the rural villages was mainly the informal village meeting situation combined with those which offer the learners more chance to actively participate.

The booklet also described the technical aspect of developing filmstrips and adapting them. It documented step by step the experience of producing a filmstrip entitled, "A Village Called Gilond"; documentary filmstrips about a women's co-operative and nutrition for women and children showing how the script, characters and props were modified because of the existing conditions and circumstances in the villages. The documentation contains a number of lessons learned, mistakes that had been committed and corrected in the completion of the filmstrip. The booklet also shared the workers' experiences in the use of other media such as folk media, soap opera approach, radio or group listening programmes, and fotonovela, for communicating family planning messages.

Chapter three deals more with the content of the population education programme. It analyses the causes of resistance to family planning and population. To counteract these resistances, the booklet suggests the following: (1) fighting ignorance; (2) getting around the religious obstacle; (3) trying to overcome women's lack of privacy; (4) overcoming social and cultural reasons such as women need to produce children, son preference, the need for more children because of economic incentives, etc. Finally, a section has been allotted to discussing the proper use of audio-visual materials and the need for training the field-workers in the use of these materials.

Descriptors: *Audio-Visual Aids; Flipcharts; Filmstrips; Folk Media; Educational Radio; Plays; Materials Preparation; Non-Formal Education; Population Education; Family Planning*

Source: FAO
Via Terme di Caracalla
00100 – Rome
Italy

USE OF AUDIO-VISUALS IN TEACHING POPULATION EDUCATION

51

Interchange; population education newsletter. Issue on: *Population education: an audio-visual approach.* Vol 10, no. 4, December 1981. 4 p.

This material explores the use of audio-visual in teaching population education in the classroom. The use of audio-visual aids enable the students to develop their listening and memory skills, analytical and logical thinking, understanding of emotional reactions and creative thinking. Audio-visual aids such as slide/tape shows, films, filmstrips, or videotapes can be used as part of an ongoing unit devoted to population issues. A film showing becomes more useful when it is accompanied by a discussion after the showing. Another use of audio-visual materials involves individualized instruction. Students asked to learn about the world population situation, for example, might do a book report or review a movie. Discussing the audio-visual materials, the values they express and students' own values is the most important part of an audio-visual experience. Teachers are suggested not only to use a mix of long and short audio-visual materials, and of films, slides, videotapes and filmstrips but they can also alternate the use of cartoons and documentary-style presentations. Humor, if carefully used, can make a serious point sometimes more swiftly and effectively than documentary approaches.

The writer also presents a list of questions or guidelines which can be used after viewing a population film. These include such questions as: what is the viewpoint? What are the chief messages of the film? Are the values of the filmmaker clearly expressed? Does this film express your own values? Are other viewpoints dealt with? Fairly? Do you think members of some subcultures in this country would agree or disagree with the values express? Do you think citizens of other countries would espouse the film's value? The article also recommends a number of population films which can be used in the classroom such as "World Population", "More" or "For Your Pleasure" which are all under four minutes and can serve as springboard for a lively discussion. A list of sources of population-environment audio-visual aids is given a the end.

Descriptors: *Audio-Visual Aids; Films; Filmstrips; Video Tape Recordings; Sound Slide Presentations; Bibliography*

Source: Population Reference Bureau, Inc.
2213 M. Street, N.W.
Washington, D.C. 20037
U.S.A.

AN ANNOTATION OF AUDIO-VISUAL MATERIALS

52

International Association of Schools of Social Work. *Audio-visual resources for population education and family planning; an international guide for social work educators,* compiled by Jacqueline Marx Atkins. New York, 1975. 148 p.

This resource guide is a collection of annotated items on population education and family planning topics available in various audio-visual media. It provides social work educators with information about audio-visual materials in population education and family planning that can be used within the social work curriculum. It is designed to make educators more aware of the availability of such materials and encourage innovative teaching techniques that incorporate the use of audio-visual media as an integral concept.

The reader will find included in the guide some discussion on the suitability of certain audio-visual methods for the classroom situation, ideas for the use of the various media, and a brief overview of the most common types of audio-visual equipment and their uses. However, the guide is not a technical handbook. More detailed information of a technical nature can best be obtained from the audio-visual centres within universities or libraries or from others who have worked with such equipment. References are also given in the bibliography for those who wish to increase their knowledge of audio-visual equipment and the many ways in which it can be used. The second section describes the various audio-visual equipment and its uses. These include flat materials (posters, photographs, flannelboard, flipchart), models and puppets, audio-equipment (record players, tape recorders, radio), still projection equipment (slide projectors, filmstrip projector, overhead projector, opaque projector,) still cameras, motion picture equipment, videorecording equipment such as television.

The third section presents descriptions of audio-visual aids which can serve as resources for population education and family planning programmes in schools of social work. They are arranged under the following five broad categories: (1) audio-visual media techniques; (2) methods of family planning; (3) motivation for family planning; (4) training for population education and family planning activities; and (5) population education.

The items were selected to cover a wide range of media, perspectives, outlooks, languages, areas, and styles, and endeavour to achieve a reasonable representation of the material available in population education and family planning that could be useful in social work education. Since it has not been possible to review all the materials included, in many cases it has been necessary to rely on the descriptions provided by the producer or distributor. Much of the material in the guide will provide a general background in theory and methods of family planning, reasons for rational population growth, and the need for general population education. This information, when built into the social worker's basic core of knowledge, can be passed on to the student or client as appropriate. Although a number of the listed audio-visual materials, particularly those concerned with motivation, are intended for use with clients, the educator might consider using some of these materials in the classroom, even though they may occasionally seem somewhat elementary. In addition to stimulating class discussion, these materials will provide students with a knowledge of audio-visual resources that may later be used with clients.

Descriptors: *Audio-visual Aids;Population Education; Family Planning; Posters; Models; Puppetry; Phonograph Records; Educational Radios; Audio-visual Equipment, Bibliography*

Source:
International Association of Schools of Social Work
345 East 46th Street
New York, N.Y. 10017
U.S.A.

TELLING POPULATION STORIES THROUGH A FLANNEL SET

53

"Let's face our future!"; your workers' education flannel set. International Labour Office, 1974. 1 packet of materials including instructions for use in English.

This booklet gives some hints on how to use a flannel set. A flannel set consists of a piece of dark flannel cloth or a blanket. It is used to show drawing, titles, symbols and so on, prepared in advance on paper or cardboard which has had some non-slip material stuck or penned to the back simply by pressing them on to the flannel by hand. The flannel set is useful because it offers complete freedom of use and in adapting one's talk to the audience. It is a lively means of putting over one's talk, demonstrating each successive point as it comes up creating an immediate impact. Arguments can also be presented in entirely visual terms. As a visual aid, it is extremely easy and cheap to prepare and use.

This particular flannel set comprises ten sheets covering ten basic subjects. These subjects focus on food, housing, health, education, employment, income, productivity, dependency, environment and migration. Each subject is presented in the form of drawings, without words or figures, so that the lecturer can give his talk and get a discussion going in any language, using expressions specific to the audience he is addressing and accompanying his talk with suitable gestures. For example, on the subject of food, two sets of figurines are given: one shows many members of a family and little food while the other shows few members of a family and adequate amount of food. The lecturer begins by putting up the figurines one by one and immediately tries to get a reaction by posing such questions as: what do you see here? Is this how we live here? Have we any food problems? If so, what are they? Why do they arise? A number of rules are also given on how to cut the figurines, how to take care of them, how to set up the flannel, how to arrange the figurines on the flannel and how to get the audience involved. The flannel can offer all sorts of other possibilities. The pictures can be used as a basis for a role-playing exercise with the participants, some of whom can volunteer to play the part of the figurines in the picture. The pictures can also be made as lively as a film by adding things, taking them away and rearranging them. The pictures can be mixed so as to bring out the relationship between them. The lecturer can add some local colour: the name of the village, town, undertaking, etc. Lastly, once the figurines have been traced and reproduced on some other supporting surface, one can stick them on to large sheets to make a series of posters or flip charts.

Descriptors: *Audio-Visual Aids; Workers' Education; Food; Health; Employment; Environment; Migration; Economic Development*

Source: Workers' Education Branch
International Labour Office
CH1211, Geneva 22
Switzerland

RADIO EFFECTIVE IN REACHING LARGE AUDIENCES WITH POPULATION MESSAGES

54

Levin, Harry L. and Robert W. Gillespie. *The use of radio in family planning.* Oklahoma City, World Neighbors, 1972. 160 p.

This publication shows why radio is one of the most effective communication tools for reaching large audiences who have limited literacy for disseminating information about family planning. It also describes step by step the procedures for developing various radio programmes. It has seven chapters.

Chapter One sets the tone by explaining why radio should be used in disseminating infomation about population and family planning. Chapter Two considers the use of radio as part of a multimedia mix for maximum impact. To plan a radio programme, audience research, media and programme evaluation should be undertaken and the booklet presents the guidelines or questions to be asked. Chapter Three gives the steps in planning a radio campaign emphasizing the importance of identifying the target audiences or listeners first, formulating varied message contents for these varied listeners and planning out the many programme types and formats that can be used for conveying the message. Chapter Four describes the different types of radio programmes, their uses and messages. This include spot announcements, radio dramas, soap opera, women's programmes, interview programmes, (celebrity, personality, serial, spot, news, special event and opinion interviews), discussion programme, symposium, panel discussion, group discussion, debate, news broadcast, magazine style programmes, documentary programme and music programmes. Chapters Five and Six go into the technical aspect by listing down some 14 general production suggestions and general writing suggestions. Chapter Seven states that many countries are already using radio for achieving the objectives of population and family planning programmes. This chapter then proceeds to describe these various radio campaigns focusing on the contents, audience coverage and results of the radio programmes. The countries whose radio campaigns are described here include Korea, India, Pakistan, Honduras, Singapore, Costa Rica, Tunisia, Guatemala, and El Salvador. The appendixes supply additional guidelines and articles on the following: a) the supplementary use of television, using soap opera to convey family planning; b) examples of family planning radio scripts.

Descriptors: *Educational Radio; Materials Preparation*

Source:
World Neighbors Publication
5116 North Portland Avenue
Oklahoma City, Oklahoma
73112
U.S.A.

PARTICIPATORY TRAINING USING MULTI-MEDIA APPROACH

55

Multi-media approach for development of instructional materials: an experience in participatory training. Report of the National Training Workshop on Population Education in Adult Education Programmes, Literacy House, Lucknow (India), 28 April – 3 May 1980. (New Delhi, Directorate of Adult Education, Ministry of Education and Culture, 1980). 234p.

This is a report of the national training workshop on population education in adult education programmes held in Lucknow, India in 1980. The major objectives of the workshop were: (1) to develop prototype mass media software and instructional materials for adult education programmes integrating population education concepts and; (2) to develop broad guidelines for developing and using of materials integrating population education concepts in adult education programmes. This report consists of the proceedings or process of the workshop and the various products which emanated during the materials preparation.

The participants were divided into two groups. The first group developed two radio programmes, four TV programmes, one literacy package, one teacher's guide, one puppet play and a set of flash cards. Five major components of population education served as the contents of the materials: health, sanitation and hygiene, maternity and child health, social and economic development, nutrition and population dynamics. The second group developed two radio programmes, two TV scripts, two plays, lesson plans, puppet plays, flipchart and flash cards. The contents deal with migration, birth spacing, maternity and child health, consequences of rapid population growth, rural health and sanitation, delayed marriage, and family size. All these materials are included in the report together with the results of the pre-test the participants conducted on these materials.

The last part provides the guidelines for developing and using materials with a view to assisting field functionaries, adult educators and trainers for experimentation, with some understanding of the process of development and utilization of materials, integrating contents of population education. The guidelines given are for the development of radio and television software, print media, folk media, and visual aids. Under radio and television software, guidelines are presented on how to develop radio programmes, how to use radio and TV programmes, how to construct and use slogans, how to develop and use features for radio, and how to conduct and use interviews. For the print media, guidelines are given on how to develop and use printed materials, how to develop and use basic literacy materials for population education, how to develop and use lesson plans, short stories, drama and poetry. Under folk media, guidelines are given on how to develop and use folk media and puppet plays. Under visual aids, guidelines are given on how to develop and use visual aids.

Descriptors: *Audio-Visual Aids; Educational Radio; Flash Cards; Educational Television; Puppetry; Folk Media; Maternal and Child Health; Family Size; Literacy; Non-Formal Education; Adult Education; India*

Source:
The Director
Directorate of Adult Education
Ministry of Education and Culture
Block No. 10, Gali No. 5
Jamnagar House, Hutments
Shahjaham Road
New Delhi 110011
India

LEARNING THROUGH ASSOCIATION BETWEEN PICTURES AND ALPHABETS

56

Santiago, Antonio P. and Concepcion E. Madayag. "The lead sentence approach: literacy education with family planning content," *Literacy Discussion* 3(1): 111-119, March 1972.

For the past 18 years, the Philippine Rural Reconstruction Movement (PRRM) has quite successfully used the syllabic method in teaching illiterates. But the usual reaction of most adults to shy away from onlookers has kept the staff in search of a technique to help change this attitude. PRRM decided to try out a new technique designed to evolve greater interest and participation from the adult learners – the *lead sentence approach.* This approach was developed based on the following rationale: a man will learn only if he has a chance to apply the knowledge and skills in ways personally beneficial to him; literacy education is imperative and crucial; its task is to make possible good society and good life and literacy education should be understood.

The objectives of the lead sentence approach are: (1) to help the adult develop self-direction, creativity, critical judgement and meaningful interpersonal group relationship; (2) to help establish human control over a social environment wherein problems are solved, abilities are learned and an educative community climate emerges.

There are three phases followed in the lead sentence approach. The first phase involves an intelligent study of the environment in which the adult learners live. Thus, every lesson has a lead sentence related to the subject matter being studied, an outcome of the discussion by the learners and use of vocabulary expressed by them. The second phase involves the study of words in the lead sentence. There are eleven lessons which serve as the basis for formation of sentences. These lessons deal with various family planning/population education topics. For example, some of the objectives of the lessons are: (1) to understand what responsible parenthood means; (2) to make the participants aware of the effects of family size on the basic necessities of life; (3) to focus attention on the importance of the role of the father and mother in the family and in society.

The third phase consists of a set of syllable cards which present syllabication of words in the lead sentence for analysis and a set of situational picture charts related to the words. The pictures become the basis for discussion. The procedures followed are: first, picture I which is the first of a series of eleven used for family life planning education, depicts a happy, contented couple with three healthy children. The educator then elicits discussion by asking questions such as: what is a family? what are its functions? the role of its various numbers? Based on the discussion, the educator now aids the learners to the mastery of word/syllables. This involves a series of audio-visual technique such as flash cards, charts and flannel boards. At the end of the lesson, writing sheets are given to the learners to practice in writing what they have learned. A Workbook-Textbook for this course has been prepared with an accompanying Teachers' Guide to meet the needs of the Population/Literacy/Family Life Planning Education in achieving the aims of the programme.

Descriptors: *Lead Sentence Approach; Non-formal Education; Adult Education; Literacy; Family Planning; Philippines*

Source: Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500, Thailand

Section Seven: General: A Literature Review

Eleven selections are abstracted in this section. Nine are instructional materials and two are research studies. None of them focuses on any single teaching/learning methodology but each one offers a cafeteria of approaches or methodologies from which the teacher can select for use in teaching population education. In offering a list of methodologies, the selections assume that there are many different ways to present information and many different ways to initiate discussion. Some methods are more effective than others for presenting specific types of subject matter and achieving specific objectives. Not all of them are suited for every class, for every community or for every subject. How a teacher or field-worker uses them depends on the classroom environment, the age level of the students and the rapport between the instructor and the class. For example, techniques such as brainstorming, values continuum question cards and incomplete sentences are good for working with a non-responsive group and eliciting discussion. The use of role-play tends to work better when the students are comfortable with the subject area and with one another. Literature and case study require students to read and do homework. Even lecture is probably more effective with large groups and at the beginning of units.

The instructional materials abstracted here provide examples and guidelines on how teachers in the formal sector and field-workers at the non-formal sector can convey or communicate population education messages more effectively through various participatory approaches. In the formal sector, the literature points out that the rationale for the use of participatory teaching methods is to develop in the students the ability to make responsible decisions by knowing how to define their own values, weigh alternatives, look at consequences and arrive at acceptable, responsible solutions. Also, the materials examined show that a programme which stresses on the process of learning will, in the long run, have greater impact on the attitudinal change of the students. In the non-formal sector, introducing change and gaining the community's involvement and support are often difficult because it requires fundamental changes in people's attitudes and behaviours. Villagers are more likely to learn and accept new ideas when they can understand them in the context of their priorities and inter-related with the other important segments of their lives. According to the literature, teaching methodologies which capitalize on this principle are more effective because they are able to increase people's commitment and involve them more fully in the programme.

The teaching methodologies used for conveying population education messages in the schools as described in the publications abstracted here include role-playing, games, brainstorming, springboards, buzzing, case study, group discussion, confrontation, interviewing, survey, process approach, acrostics, agree-disagree statements, character comparisons, circle response, choral reading, Bible personalization, drama, panel discussion, symposium, inquiry approach, values clarification, audio-visual approach, field trip, simulation, debate, forum, demonstration and

colloquy. These teaching methodologies have been suggested and demonstrated for use in sex education, population education, religion as related to population education, demography and home economics.

In the non-formal sector, the teaching strategies presented by the reviewed materials can be classified according to: problem-centred approach, projective approach, expressive/creative approach and participatory approach such as those which will sensitize field-workers and develop community awareness; those that will encourage the learners to open up and explore their problems; those that will involve the learners in creating learning activities and in planning and solving their own problems. These major approaches use a lot of picture cards, group discussions, visual aids such as booklets, posters, slide shows, comic books, fotonovela (story in photographs), puppet, Flexiflans and Johari's window. These methodologies have been used in the publications for literacy education, health and nutrition and labour education which are related to population education.

The majority of the publications provide both the theoretical and conceptual discussions of the various teaching methodologies – their definitions, theoretical framework, rationale, objectives, uses, and advantages and disadvantages as well as the practical aspect such as the procedures, application to specific topics or learning activities, exercises and sample lessons.

APPLYING VARIOUS TEACHING STRATEGIES IN TEACHING HOME ECONOMICS

57

American Home Economics Association. International Family Planning Project. *Handbook of home economics lessons incorporating family planning; population education and quality of life; working draft.* Washington, D.C., 1974. 198 p.

This handbook accompanies the "Handbook of Teaching Strategies and Techniques for Use in Implementing Lessons Relating to Family Planning, Population Education and Quality of Life". While the latter provides a list of teaching strategies which include their definitions, uses and procedures for use, this material shows how these teaching strategies and techniques can be applied concretely in teaching home economics lessons that incorporate family planning, population education and quality of life. For instance, games are used for teaching about the relationship between housing and population and in examining stages in the family life cycle. Role-playing is used for explaining factors within a home that influence the quality of life; for introducing the concept of decision-making among teenagers and adults; and for making students recognize situations where changes in roles are necessary. Brainstorming is shown to be the most widely used teaching strategy. It is used in identifying natural, human and material resources which will enhance quality of life for individuals and families; to enable students to recognize factors in the physical and societal environment which influence management and use of natural resources; in acknowledging the effects individual family members have on each other; in identifying those factors which are responsible for having community agencies perform some family functions; in examining the male and female roles and responsibilities in families and the responsibilities involved in becoming a parent and in showing the relationship between family size vis-a-vis family economy and family economy as it affects and is affected by national economy. Group discussions are more appropriately used in identifying factors which influence one's standard of living and recognizing the effects of poor living standards on individuals and families; in differentiating those factors which contribute to a family's welfare from those that don't; and identifying family and societal environmental factors which influence attitudes toward reproductive behaviour. Another widely used teaching strategy is case study. It is written record of a specific situation which serves as springboard for discussion. It is used in identifying behaviour which contributes to positive self-development; in introducing the concept of human and resource development and in recognizing human and material resources available for improving housing.

The sets of lessons have been grouped according to various major topics such as population, values and costs of children, resource utilization, country and world population, women in the labour force, life cycle, family functions, individual and family roles, management, decision-making, standard of living, family planning, reproductive behaviour, housing, clothing, health, management of food resources, nutrition and diet of pregnant women. Each lesson consists of the following items: topic, generalization, target group, aim of lesson, behavioural objective of the lesson, duration, teaching strategies and techniques, suggested class activities, suggested follow-up activities and evaluation.

Descriptors:	*Instructional Materials; Group Discussions; Games; Case Studies; Role Playing; Brainstorming; Population Education; Home Economics; Quality of Life; Family Life; Women; Health; Nutrition; Maternal Health*
Source:	International Family Planning Project American Home Economics Association 2010 Massachusetts Avenue, N.W. Washington, D.C. 20036 U.S.A.

VARIOUS TEACHING STRATEGIES ENRICH CLASSROOM EXPERIENCES

58

American Home Economics Association. International Family Planning Project. *Handbook of teaching strategies and techniques for use in implementing lessons relating to family planning, population education and quality of life.* Washington, D.C., 1974. 51 p.

This handbook presents teaching strategies and techniques to be used when implementing family planning/population education materials in home economics classrooms. Home economics operate at an advantage in that they often deal with laboratory situations involving real materials. The techniques and strategies presented in the handbook are not new but do present interesting variations for use in the classroom and are intended to provide supplemental means of enriching in-class experiences. Contemporary educational literature emphasizes the importance of variety, novelty and personal involvement as critical factors to aid student learning. This handbook is presented in response to that idea.

All techniques and strategies presented are organized into three categories: class organizers, class activities and class materials. Class organizers include the following: brainstorm, circular response, colloquy, committee grouping, debate, fishbook, forum, laboratory, large group discussion, lecture, opposing panel, panel question and answer, small group discussion, buzz group and symposium. Class activities include anecdotes, assignments, case study, contrived incident, demonstration, field trip, games, interview, learning by inquiry, learning packages, constructing pantomine, programmed instruction, projective technique, questionnaires, resource persons, role-play, simulation, skits, structured observation and student reports. Class materials include bulletin board, cartoons, charts, diagrams, graphs, display, exhibit, felt and flannel board, flash cards, flip charts, homemade movies, hook and loop board, magnetic board, models, newspapers, photographs and posters. Each item is briefly defined including an enumeration of its uses or objectives. To help readers discriminately use the technique, the strengths and weaknesses are also presented. Finally, the roles or procedures for implementing the technique are spelled out.

Descriptors:	*Teaching Methods; Teaching Techniques; Class Activities; Classroom Materials; Population Education; Family Planning Education; Theoretical Discussion*

Source: International Family Planning Project
American Home Economics Association
2010 Massachusetts Avenue, N.W.
Washington, D.C. 20036
U.S.A.

HOW TO HANDLE, SEX EDUCATION QUESTIONS

59

Bignell, Steven. *Sex education: teacher's guide and resource manual.* Revised edition. Santa Cruz, Network Publications, 1982. 277 p.

This guide and resource manual is intended to provide teachers of sexuality education with techniques, examples and information. Although the major audience is the secondary school teachers, the manual is also designed to be useful to teachers and group leaders in many other settings – community college classes, parent groups, special education classes, church youth groups and others. In teaching the lessons contained in this manual, the teachers are advised to seek the approval of a parent-community advising committee and the students' parents. The manual is divided into four parts. The first section deals with the general and theoretical, providing the general objectives for teaching human sexuality, the ground rules to be followed in teaching it and the characteristics of a good sexuality educator.

The second part describes various teaching techniques designed to provide students with opportunities to ask questions, share ideas and discuss attitudes and beliefs. By using learner-centred teaching approaches, students will be able to share their own experiences and beliefs with others of their own age group. Young people gain most of their sexual information from their peers. If the classroom is a place where students can share ideas with each other, where the teacher can correct misinformation and encourage careful consideration of difficult issues, the students will both learn and be able to integrate their knowledge with their experiences. The techniques included here are the following: lecture, discussion, incomplete sentences, values continuum, Uncle Henry's advice column, brainstorming, advantages/disadvantages, question cards, anonymous questions, questionnaire, films, guest speakers, case study, literature, role-playing, popular music, and learned statements. For each technique or method, the definition, uses and procedures are given without applying them on any subject area.

While the second part focuses on techniques, the third part consists of ten subject areas that are often included in a sexuality education class and provides the teacher with specific teaching ideas for each subject area. The subject areas include the following: sexuality and values, male and female roles, dating and relationships, anatomy and physiology, birth control, pregnancy, childbirth and parenting, teenage pregnancy, sexual behaviours, sexually transmitted diseases, and sex and society. Most of the subject sections begin with an informational outline. These outlines provide the teacher with the framework and basic information needed to lecture and lead discussion. After the outline comes a few brief teaching notes and comments. The teaching technique or method for each subject area is also given. For example the value continuum is appropriately used in discussing the roles of male and female and the importance/role of women in the society. Or role-playing is used in discussing with a 17-year-old daughter about becoming sexually involved.

The last part consists of appendixes such as sample student evaluation, list of films and resources, sample pre-post tests, sample parent notification letter; rationale for family life and sexuality education and an analysis of state policies in sex/family life education.

Descriptors: *Instructional Materials; Secondary Grades; Sex Education; Human Sexuality; Expository Approach; Discussions; Brainstorming; Case Studies; Questionnaires; Role-Playing; Theoretical Discussion*

Source: .
ETR Associates
1700 Mission St.
Suite 203-204
Santa Cruz, CA. 95060
U.S.A.

POPULATION INQUIRIES BETTER ANSWERED THROUGH DIFFERENT TEACHING STRATEGIES

60

Indiana University. Social Studies Development Centre. Population Education Project. *Population inquiries: U.S. and world dynamics.* Bloomington, 1974. 2 vols.

This is a compilation of lessons that utilize various teaching methods to more effectively communicate and explain a range of population issues. These teaching methods include value clarification, role-play, play, group discussion, audio-visual strategy, game, inquiry approach and picture story-telling approach. The process of valuing is the most widely used teaching methodology in this set of lessons. More specifically, it is used in lessons: where students are made to understand some of the value judgements that are involved in providing assistance to developing countries; where personal values sheets are used to enable students to identify those things which influence their feelings and thinking about family size and where students identify and discuss ways of dealing with value conflicts involved in issues related to population policy decision-making. Role-play is also a useful strategy for involving students in the understanding of population issues. It is used in lessons: where a playlet uses a setting wherein a government commission is meeting to talk with the public about a proposed law dealing with forced birth control and family size limitation and students take up various positions to support or negate this law; where students are assigned as population experts who form part of a team helping the government of India. Their job is to help plan a population programme for villages in rural India the goal of which is to reduce family size from an average 5-6 children to an average 2-3 children. Another role-play requires students to be population experts working for AID. They are in charge of managing a budget of $100,000. A number of requests for funds have come in and they are to decide which requests are considered priorities for funding. Games have also been used in a couple of lessons, one made use of the Planafam game which starts with the marriage of a young Indian couple who decide to build a family, and as they grow older, they are faced with many problems regarding the growth in their family size. The students can choose among the various alternatives on the board where each has some cost, except for the option associated with potential childbearing. Another game modifies the role-playing where a team of AID population experts are in charge of giving funds for population programmes. In the game, each request for funding is represented by a space on a game board. Teams must decide how much of their money should be given to each project. Bargaining and politicking are allowed to convince the team to give funds for certain projects. For all these lessons, audio-visual aids, films, readings and discussions heavily supplement the major teaching methods used.

Descriptors:	*Instructional Materials; Population Dynamics; Family Size; Secondary Grades; Values Clarification; Role-Playing; Games; Group Discussions; Audio-Visual Instruction; Inquiry Approach*
Source:	Population Education Project Social Studies Development Centre Indiana University Bloomington, Indiana U.S.A.

GROUP DISCUSSION AS A UNIVERSAL TEACHING METHOD

61

International Labour Office. *Workers' education discussion methods on population and family planning questions.* Geneva, 1971. 32 p. (Special number on population questions of Labour Education, September 1971.)

This paper is designed for the use of organizers of adult and workers' education and especially as an aid in: (1) teaching workers to understand population problems and family planning; and (2) training their teacher-motivators. Parts One, Two and Three explain step-by-step group discussion in detail. Part Four shows how to use this method in teaching population questions.

Group discussion is "a universal teaching method" appropriate for adult learners anywhere. Discussion in small groups is natural and common to men and women throughout the world. A large part of the traditional culture is transmitted in this way. Properly organized, group discussion is a most efficient teaching method. It is appropriate for adult education at any level and for dealing with any subject close to the experience and interests of the participants. It is especially useful in teaching illiterate or semi-literate workers, and it is especially appropriate for teaching a delicate subject such as family planning. It is economical in that a large number of adults can be handled at one time, organized by a single expert in the methods and taught by a single expert in the subject. The only disadvantage is that discussion in groups, as a teaching method, requires a certain amount of time. A teacher cannot cover a lengthy curriculum in a short time. But this is not a disadvantage as far as less educated adult learners are concerned, who learn best by slow and repetitive methods. Step-by-step group discussion is a method designed precisely for their active participation, one which they enjoy and one by which they really learn and do not readily forget.

Family planning is a subject which raises questions of physiology, morals, religion, customs and belief which are not easily discussed in public. However, small groups of workers, gathered semi-formally amongst themselves with one of their own acting as discussion leader, another as reporter, and confronted with challenging questions, will discuss family planning seriously. Such public discussion tends to make the subject respectable and, therefore, acceptable.

The teaching methods proposed in

this paper stem from the conviction that free and open discussion of the welfare issues and of the public and private problems involved in population policy and family planning in itself helps people to face these problems in a more relaxed and rational way.

The appendixes consists of some hints for group discussion leaders; list of discussions questions on family size and welfare, on social problems facing women and on Walt Disney film "Family Planning".

Descriptors: *Group Discussions; Workers' Education; Adult Education; Family Planning; Theoretical Discussion.*

Source: International Labour Office
CH-1211
Geneva 22
Switzerland

SIMPLE TECHNIQUES IN APPROACHING LOCAL COMMUNITIES

62

Keehn, Martha, ed. *Bridging the gap: a participatory approach to health and nutrition education.* Westport, Save the Children, 1982. 103 p.

This manual is addressed to nutrition and health educators who are interested in trying out new participatory ways of working at the community level. Its purpose is to describe simple techniques by which field staff can be trained to approach local communities more sensitively and to involve them more fully in achieving better health. It is also useful for population extension workers in the out-of-school sector who integrate population education concepts into health and nutrition education programmes.

Community involvement in its deepest sense often requires fundamental changes in people's attitudes. This is true particularly where people have long been apathetic, dependent on outside directives, or resistant to new ideas. Cultural beliefs and taboos may keep them from adopting food habits that could greatly improve their health; or they may not have the money to buy better foods or land on which to grow food crops or raise farm animals. Experience shows that in such situations, merely imparting information about better nutrition does not solve the problem. Therefore, many nutrition programmes in the developing countries are trying other means, including demonstrations, hands-on experience and non-formal education, to increase the people's understanding of nutritional needs and to develop in them a genuine sense of commitment to find solutions.

But even the best of methods will not work unless field staff and supervisors are suitably trained. If staff are expected to conduct participatory learning for adults, then they themselves need to experience participatory learning. The techniques and materials described in this manual are, accordingly, all "experiential". They have been field tested in more than one country and in some instances by more than one agency.

There are around 28 participatory strategies which are described in this manual. They have been grouped according to seven stages of a field-worker's job or responsibility. The first stage entails a field-worker to help the community uncover their health and nutrition problems by sensitizing themselves and other community workers to these problems. Participatory approaches such as village visits, Johari's window and role-playing are recommended for this. When community members are sensitive to each others' perceptions and actions, it is more likely that they will discuss their problems and participate in resolving them. In this stage, three activities are given, i.e., Flexi-flans, Serialized Posters, and Community Map which are used to increase awareness and encourage further discussion of health and nutrition problems. In the next stage, field-workers are expected to encourage the village people to analyse their health and nutrition problems. This can be done more effectively with the use of five suggested activities namely, Discussion Starter, Open-ended Stories with Maxi-flans, Lollipuppets, Food Habits Chart and Child Weighing. The third stage involves the villagers in preparation of learning materials and how these materials are put to use in a learning situation in the community. The following participatory activities are suggested for this stage: Picture Cards, Comic Book/Fotonovela, Slide Shows, Card Games, Comparative Posters, Picture Recipes, Booklets, Broken Squares, House of Health and Nutrition Games. The last stage involves the villagers in solving the health and nutrition problems that they have identified. For instance, the participatory activity, "Thinking Ahead" helps field-workers to organize the learning activities and the "Setting Objectives" exercise helps them think about the work they will do in their communities. Then in the activities entitled, Setting Community Goals, Bamboo Bridge, Story with a Gap and Community Nutrition Graph, the villagers are assisted in deciding what they would like to accomplish in the near future, to set goals, and develop step-by-step plans for solving community problems and to evaluate improvements in their community.

Descriptors: *Participatory Approach; Role-Playing; Educational Games; Non-Formal Education; Instructional Materials; Health; Nutrition*

Source:
Save the Children
54 Wilton Road
Westport, Conn. 06880
U.S.A.

A LIST OF TEACHING STRATEGIES TO ENABLE STUDENTS TO MAKE DECISIONS

63

Philippines. Ministry of Education, Culture and Sports. *Background information for teachers in population education.* Manila, 1976. 112 p.

Population education in the Philippines is integrated into social studies, health, science, home economics and mathematics and to help teachers in their proper integration, five teachers' guides have been developed. To accompany these teachers' guides, this publication entitled, "Background Information for Teachers in Population Education" was prepared. This guide is aimed at providing the teachers with a better perspective and understanding of the national population education programme, its objectives, the scope and sequence of the population education programme as integrated into the five subject areas in the primary and secondary level, and the basic contents and the strategies used for teaching population education. Section One contains all the information with regard to this objective. Section Two contains selected readings and excerpts which serve as background reference materials to enable the teachers to gain deeper insights on the various issues of population.

In Section One, a listing and description of teaching strategies are presented.

The rationale for placing importance on teaching methods in population education is presented in this section. They way in which a child learns about population may be just as important as what he learns about it. A programme which views the child as an empty container into which knowledge can be 'poured' only expands the child in a very limited way; a programme which helps the child to learn how to learn will not only expand his population horizons, but also make him better able to investigate and act on other problems he will face in life. The latter type of programme which stresses learning how to learn will also, in the long run, have a greater impact on his population attitudes since it will better enable him to deal with whatever population changes and problems the future might bring. Hence, the Population Education Program makes use of various strategies which are expected to help the students to understand all aspects of the population situation and to arrive at their own conclusions and decisions. The different strategies used in developing some of the lessons are discussed in this section in order to enable the teachers to utilize them effectively. These include the following: role-playing, brainstorming, use of spring-boards, buzzing, case study, confrontation, small-group discussions, interviewing, making surveys, process approach and use of graphs. Each method is briefly defined and their steps or procedures are presented. Their application to specific population education concepts are not shown here however.

Descriptors: *Instructional Materials; Resource Materials; Teaching Methods; Population Education; Theoretical Discussion.*

Source: Chief
Population Education Program
Ministry of Education, Culture and Sports
Palacio del Governador on Aduana St.
Intramuros, Manila
Philippines

HOW POPULATION EDUCATION CONCEPTS ARE TAKEN UP IN RELIGION

64

Philippines. Ministry of Education, Culture and Sports. *A teacher's guide in population education for religion, first year to fourth year.* Manila, Ministry of Education, Culture and Sports (Philippines) in co-operation with Population Center Foundation (1984). 198 p.

This guide is one of the six developed by the participants in a Workshop on the Development/Revision of Teacher's Guides in Population Education for Private Schools. This guide integrates population education concepts into Religion. It consists of eight lessons, two for each year ranging from first to fourth year. For the first year, the population situation in the beginning of the world and the Philippine population policies, programmes and guidelines and Christian principles are dealt with. In the second year, the lessons focus on men and women in society, then and now. The third year brings up the topics on the Christian and material goods and one's duty to the call of the Church. In the fourth year, the topics focuses on vocation in today's world and positive Christian living.

At the end of these sets of lessons, a list of teaching strategies is given. These include the following: acrostics agree-disagree statements, brainstorming, Bible personalizations, case studies, character comparisons, choral readings, circle response, creative writing, drama, dyads, graffiti posters, interviews, montage, mural, panel, paraphrasing, role-play, small groups, scripture search and symposium. The purpose for and descriptions of the use for each item are given briefly. For example, brainstorming provides a situation where there is optimum stimulation for students to think of ideas related to a situation or a problem, and where students can express their ideas without fear of criticism. Bible personalizations help students relate biblical verses and teachings with their own lives and experiences. Character comparisons enable the students to analyse elements which cause some people to live successful lives in God's will while others fail, through the close examination of characters. Circle response enable all the class members to give their opinions about a controversial issue especially when the students seem reluctant to express an opinion on the subject. Role-playing enables students to realize how a principle they have been studying could apply to life, by seeing and discussing possible reactions to a common situation.

Descriptors: *Instructional Materials; Population Education; Social Studies; Religion; Catholicism; Secondary Grades; Teaching Methods; Theoretical Discussion; Philippines*

Source: Chief
Population Education Program
Ministry of Education, Culture and Sports
Palacio del Governador on Aduana St.
Intramuros, Manila
Philippines

or Director
Population Information Division
Population Center Foundation
P.O. Box 2065
Makati, Metro Manila
Philippines

HOW AND WHY PEOPLE LEARN

65

Srinivasan, Lyra. *Perspectives on non-formal adult learning.* New York, World Education, 1977. 122 p. (Functional education for individual, community, and national development).

This is the first in a series of monographs devoted to functional, integrated, non-formal education programmes that are designed to promote individual growth, community action and national development. Changes have been taking place as well in our understanding of the learning process: how and why people learn. Influences for new concepts have come from many fields – from the social sciences, psychology, ethics, contemporary theology, commerce and industry, and from new communications media as well as from education. The writer pulls these strands together in this monograph and in addition include practical participatory learning and teaching methodologies to illustrate the conceptual and theoretical explanations of the learning process.

The monograph has three sections. The first one identifies the various forces that have converged to give non-formal education the distinctive characteristics that disinguish it from traditional formal schooling. A review of these influences draws attention to their common ground as well as to conflicting opinions and unresolved issues.

The second section explores three approaches to non-formal education that have been developed to meet the basic educational needs that current thought has identified: the need to strengthen the problem-solving capacity of learners; the need to equip them with coping skills to deal more effectively with their environment; and the need to develop the individual's inner potential and to strengthen the positive awareness of self as a basis for practical action. Examples are primarily drawn from non-formal education programmes in which World Education has played a role: in Thailand, Ethiopia, Bangladesh, Ghana, Turkey, the United States, and the Philippines.

The third section consists of four curriculum models and a continuum to show how the theory of learning is applied. A summary of the writer's assumptions is also given.

The appendix supplies sample exercises and learning materials, some sample forms for recording feedback and brief descriptions of the non-formal educational projects. The learning/teaching approaches described in this monograph include problem-centred approaches such as the "Thai Khit-pen Concept"; fishbowl discussion; brainstorming; role-playing; projective approaches and self-actualizing approaches. The writer presents this in a matrix consisting of four models: information model, problem-solving model, projective model and expressive/creative model. Each is described according to the teacher role, learner role, stimulus and emphasis. Self-awareness exercises include the following: "How I Behave in a Group"; "Entering Your Own Space"; and "Rural Adult Characteristics". Exercises which encourage learner participation include flexiflans, serialized posters, photo parade and broken squares.

Descriptors: *Teaching Methods; Non-Formal Education; Adult Education; Projective Approach; Self-Actualizing Approach; Problem-Centred Approach; Brainstorming; Discussions; Problem-Solving; Role-Playing; Theoretical Discussion; Instructional Materials*

Source:
World Education
251 Park Avenue South
New York, N.Y. 10010
U.S.A.

METHODS THAT CONVEY POPULATION EDUCATION MESSAGES MOST EFFECTIVELY

66

"Studies related to teaching methodology", in: India. National Council of Educational Research and Training. Population Education Unit. *A decade of population education research in India – a status study.* New Delhi, 1981, p. 51-69.

This chapter consists of five studies which deal with the effectiveness of various teaching methodologies in conveying the message of population education. While teachers and educators are well aware of the different methods of teaching, it is necessary to find out which of the methods are specifically effective in conveying the message of population education. The studies reviewed in this section were aimed at answering the questions such as which method of teaching is more effective? Which of the school subjects is more amenable for integration? And how to integrate contents in existing syllabii without losing the continuity of subject matter or overburdening it?

Three studies reviewed here are related to the effectiveness of the approaches, one study on holistic and integrated approach, the second study on formal and non-formal approaches and the third on the curricular and non-curricular approaches to the teaching of population education. In these studies, the pre- and post-tests have been conducted to find out the effectiveness. One study is an action-research to find out the effectiveness of a package of programmes at the university level. In this study, a package programme involving lectures, debates, film shows and exhibition related to population problem was found effective at the university stage. Another study found that the integrated method is superior to the holistic method of teaching population education. The third study found that both the formal and informal approaches of teaching were equally effective. Another study developed a curriculum for secondary teacher trainees and evaluated its effectiveness by implementing the programme in a training college for one academic session. It showed that the contents and methodology of population education can be imported in a training college in 30 periods – 20 periods for covering ten topics and ten periods for related co-curricular activities in a training college.

Descriptors: *Teaching Methods; Teaching Strategies; Integration Approach; Separate Discipline; Population Education; Research; Abstracts; India*

Source: Head
Population Education Unit
National Council of Educational Research and Training
Sri Aurobindo Marg
New Delhi-110016
India

EFFECTIVENESS OF TEACHING METHODOLOGIES IN ASIA

67

Unesco Regional Office for Education in Asia and the Pacific. *Population education programme in Asia: what research says.* Bangkok, 1983. 191 p. (Population Education Programme Service abstract-bibliography series 4)

This issue is the fourth in a series of abstract-bibliographies dealing with various concrete issues and problems raised by population education workers in the course of undertaking population education programmes. This fourth volume focuses on the specific problems faced by the participating countries when researching, evaluating and monitoring their population education activities. A brief analysis of project documents shows that research and evaluation is the weakest component in the population education programme.

Nevertheless, the last 12 years of the programme's existence in Asia and the Pacific has seen a few sporadically conducted research and evaluative studies. Most of these research studies focus on baseline surveys such as: (a) students', teachers' and parents' knowledge and attitude towards population education; (b) content analysis of existing syllabi and textbooks; and (c) socio-cultural studies for planning and implementing population education programmes. A few countries have also gone into evaluative research by evaluating the effectiveness of their training programme curriculum development and instructional materials, teaching methodologies and classroom instruction. This volume synthesizes these research and evaluative studies.

This abstract-bibliography is divided into the following sections: (a) Section One

– Knowledge, attitude and behaviour of teachers, students and parents towards population education and population issues; (b) Section Two – Personnel training; (c) Section Three – Curriculum and materials development; (d) Section Four – Teaching methodologies; (e) Section Five – Evaluation of classroom instruction; (f) Section Six – Programme evaluation.

The section on teaching methodologies contain eight studies undertaken in the Philippines (five), India (one), Indonesia (one) and Thailand (one) variously conducted from 1971 to 1982. Seven of the studies are experimental in approach and involve comparisons of at least two groups that were similar in all respects except for the teaching method used. One is a descriptive study using a questionnaire for gathering data. In the experimental studies, generally, one group was taught by the traditional method while other groups were taught with various non-traditional teaching methods, such as the inquiry approach, modular approach, discovery method, values clarification or a combination of various informal methodologies such as role-playing, problem-solving, debates, discussions, games and simulation. The groups were then compared on the basis of student outcomes such as gains in knowledge, retention of factual information or concepts, development of desirable attitudes, development of critical thinking skills and more active participation in the classrooms. Tests measuring these different student outcome variables were administered to the students and then gain scores (post-test scores minus pre-test scores) were compared, using statistical tests (T-tests, analysis of variance or analysis of covariance) to determine whether one group had achieved significantly better scores than the others. Based on these statistical tests, inferences were made as to which teaching method was more effective. Five of the eight studies went one step further by investigating the influences of intervening variables with the changes in the various mentioned outcomes, such as teachers' and students' sex, their culture, competence and personality; the degree of controversiality of the issues; the extent of administrative support; the duration of the study; the urban-rural variable; and the location of the schools.

Generally, the findings of the studies are mixed. While some studies showed the superiority of non-traditional teaching methodologies over the traditional ones, some studies on the other hand proved otherwise. As the studies reveal, there are a lot of extraneous factors which account for their effective or ineffective use. For instance, authoritarian-oriented teachers cannot successfully teach by the discovery approach. Some students are not prepared to undertake the problem-solving process and time is too short for students to discover the various alternative sides of an issue by themselves. The fact that school administrators and the general environment or culture of the place do not allow open and free discussions of controversial population-related issues also inhibits the successful use of the methods.

Descriptors: *Teaching Methods; Expository Approach; Inquiry Approach; Modular Approach; Values Clarification; Discovery Approach; Learning-Centred Approach; Research; Abstracts*

Source:
Unesco Regional Office for Education in Asia and the Pacific
Population Education Clearing House
P.O. Box 1425, G.P.O.
Bangkok 10500
Thailand

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